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# ENGLISH BOTANY;

OR,

COLOURED FIGURES

OF

## BRITISH PLANTS,

WITH THEIR

ESSENTIAL CHARACTERS, SYNONYMS, AND PLACES OF  
GROWTH.

BY

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THE FIGURES BY

JAMES SOWERBY, F.L.S. G.S. &c.

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“ . . . . . quos ipsa volentia rura  
Sponte tulere sua . . . . . ” VIRGIL.

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THE THIRD EDITION,

ARRANGED ACCORDING TO THE LINNÆAN METHOD, WITH THE DESCRIPTIONS  
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# ENGLISH BOTANY.

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## CLASS XIII. POLYANDRIA.

### ORDER I. MONOGYNIA.

GENUS CCLXXVII. ACTÆA. *Bane-berry.*

*Nat. Order.* RANUNCULACEÆ.

GEN. CHAR. *Calyx* inferior, 4-leaved, deciduous. *Petals* 4.  
*Berry* 1-celled. *Seeds* numerous, flat.

Perennial herbs, with alternate, compound leaves, and white flowers. Natives of Europe and North America.

ACTÆA SPICATA. *Herb Christopher.* TAB. 746.

Raceme erect, elongated. Petals as long as the stamens. Pedicels of the fruit slender.

*Actæa spicata*, E. B. 918. *Smith* III. 3. *Lindley* 14. *Hooker* ed. 2. 257. ed. 3. 261.

Rare. In mountainous woods and thickets, in the limestone districts of Yorkshire, and Cleish woods, Scotland, where it flowers in May and June. Root creeping. Stem erect, 1 to 2 feet high. Leaves petiolate, twice or thrice ternate; leaflets ovate, deeply cut and serrated. Berries purplish-black, juicy; they are foetid and nauseous both in smell and taste, and, as well as the whole herb, are reputed to be poisonous.

GENUS CCLXXVIII. CHELIDONIUM. *Celandine.*

*Nat. Order.* PAPAVERACEÆ.

GEN. CHAR. *Calyx* inferior, 2-leaved, deciduous. *Petals* 4.  
*Stigma* 2-lobed. *Pod* long, linear, 1-celled, 2-valved; the valves opening upwards. *Seeds* numerous, crested.

Perennial herbs, with tender pinnatifid leaves, and an acrid yellow juice.

**CHELIDONIUM MAJUS.** *Common Celandine.* **TAB. 747.**

Peduncles umbellate. Leaf-wings decurrent, bluntly lobed and toothed. Petals roundish, entire.

*Chelidonium majus*, *E. B.* 1581. *Smith* III. 4. *Lindley* 18. *Hooker* ed. 2. 257. ed. 3. 260.

Frequent in shady situations about towns and villages, chiefly on old walls, among calcareous rubbish, or where the soil is chalky, its bright yellow flowers gaily contrasting with the glaucous leaves in the months of May and June. The deep yellow juice is highly acrimonious, but is sometimes employed in domestic medicine diluted with milk to remove white specks from the eye, and as a remedial application in ringworm and other cutaneous eruptions.

*C. laciniatum* of Miller, *Lindley* 18, is probably a variety of this, with the segments of the leaves more deeply divided into linear, acute lobes.

**GENUS CCLXXIX. GLAUCIUM.** *Horned-Poppy.*

*Nat. Order.* **PAPAVERACEÆ.**

**GEN. CHAR.** *Calyx* inferior, 2-leaved, deciduous. *Petals* 4. *Stigma* 2-lobed. *Pod* long, linear, mostly 2-celled and 2-valved. *Seeds* numerous, dotted, destitute of crest.

Annual or biennial herbs, with rough, pinnatifid, glaucous leaves, and yellow, red, or purple fugitive flowers. Juice yellow, nauseous. Natives of Europe and northern Asia.

**GLAUCIUM LUTEUM.** *Yellow Horned-Poppy.* **TAB. 748.**

Stem smooth. Upper leaves sinuate, embracing the stem. Pod minutely tuberculated; dissepiment spongy.

*Chelidonium Glaucium*, *Linn.* *E. B.* 8. *Glaucium luteum*, *Smith* III. 6. *Lindley* 17. *Hooker* ed. 2. 257. ed. 3. 260.

Abundant on sandy sea-shores, growing often within reach of the waves. A large and widely spreading plant, sending out numerous branched stems 1 to 3 feet high. The whole herb is exceedingly glaucous, with scabrous leaves, which toward the root are deeply laciniated, jagged, and curled. Flowers very large, of a bright golden yellow, fugitive, but coming out in succession through the summer: they are succeeded by pods 10 or 12 inches in length.

**GLAUCIUM PHÆNICIUM.** *Scarlet Horned-Poppy.* **TAB. 749.**

Stem hairy. Cauline leaves pinnatifid, cut. Pod rough with upright bristles; dissepiment spongy.

*Glaucium phœnicium*, *E. B.* 1433. *Smith* III. 7. *Hooker* ed. 2. 257. ed. 3. 260. *G. corniculatum*, *Lindley* 18. *Chelidonium corniculatum*, *Linnæus*.

A native of sandy fields and sea-shores, said to have been found in Norfolk and in the island of Portland, but very doubtfully indigenous.



An annual, flowering in June and July. Petals obovate, scarlet, with a dark spot at the base of each.

**GLAUCIUM VIOLACEUM.** *Violet Horned-Poppy.* TAB. 750.

Stem glabrous. Leaves tripinnatifida, with linear segments. Pod 3-valved; dissepiments membranous.

*Chelidonium hybridum*, Linn. E. B. 201. *Römeria hybrida*, Decand. Lindley 18. *Glaucium violaceum*, Smith III. 7. Hooker ed. 2. 257. ed. 3. 260.

A very local plant, and probably introduced, being found only in cornfields in Norfolk and Cambridgeshire, and there not very frequent. It is an annual, flowering about the middle of May. Petals very fugacious, of a purple-violet hue, with a dark red spot at the base of each. Pods usually with a few hairs towards the upper end.

GENUS CCLXXX. MECONOPSIS. *Welsh Poppy.*

Nat. Order. PAPAVERACEÆ.

GEN. CHAR. *Calyx* inferior, 2-leaved, deciduous. *Petals* 4. *Style* short. *Stigma* 4—6-rayed. *Capsule* 1-celled, opening at the top by 4—6 valves. Receptacles of the seeds filiform.

Perennial herbs, with yellow flowers; originally confounded with the next genus, from which, however, they essentially differ in the structure of the ovarium, the presence of a style, and the yellow colour of their juices.

**MECONOPSIS CAMBRICA.** *Common Welsh Poppy.* TAB. 751.

Capsule smooth. Leaves mostly petiolate, pinnate; the segments jagged and divided.

*Papaver Cambricum*, Linn. E. B. 66. Smith III. 16. *Meconopsis Cambrica*, Lindley 17. Hooker ed. 2. 257. ed. 3. 260.

A native only of rocky and alpine districts; not unfrequent in North Wales, but met with likewise in other parts of the kingdom, chiefly in shady places about cascades and waterfalls. An elegant and delicate-looking plant of a somewhat succulent habit. Flowers in July and August.

GENUS CCLXXXI. PAPAVER. *Poppy.*

Nat. Order. PAPAVERACEÆ.

GEN. CHAR. *Calyx* inferior, 2-leaved, deciduous. *Petals* 4. *Stigma* radiated, sessile on the top of the ovarium. *Capsule* 1-celled. *Seeds* numerous, on parietal receptacles project-

ing towards the centre of the cavity, and escaping by pores beneath the projecting rim of the stigma.

Herbs with wing-cleft, alternate leaves, and solitary inflorescence. The flowers, on long peduncles deflexed before expansion, are of various shades of red, or purple, yellow, and white, but never blue. All of the species are narcotic, and secrete a white milk-like juice in which that property resides: in its inspissated form this is the Opium of commerce. Europe and the central parts of Asia seem to be the chief stations of the genus.

\* *Capsules bristly.*

PAPAVER ARGEMONE. *Long-prickly-headed Poppy.* TAB. 752.

Capsule clavate, ribbed, bristly. Stem leafy, many-flowered. Leaves bipinnatifid.

Papaver Argemone, *E. B.* 643. *Smith* III. 10. *Lindley* 16. *Hooker* ed. 2. 256. ed. 3. 259.

A native of cornfields and waste ground, where it is not unfrequent on a gravelly or sandy soil. Annual. The flowers, which appear in June, are of a dull scarlet colour passing into orange, and are smaller than in any other native species, those of *P. hybridum* excepted. The long slightly swelling capsule is only bristled towards the upper extremity.

PAPAVER HYBRIDUM. *Round-rough-headed Poppy.* *Mongrel Poppy.* TAB. 753.

Capsule nearly globular, furrowed, bristly. Calyx very hairy. Stem leafy, many-flowered. Leaves doubly pinnatifid.

Papaver hybridum, *E. B.* 43. *Smith* III. 9. *Lindley* 16. *Hooker* ed. 2. 256. ed. 3. 259.

Occasionally met with in sandy and chalky fields, in cultivated districts throughout the kingdom, but chiefly in the southern counties of England, where however it may be regarded as somewhat rare. It is an annual, with small, deep crimson or purplish flowers, which come out in July.

PAPAVER NUDICAULE. *Naked-stalked yellow Poppy.* TAB. 753\*.

Capsule hispid, obovate, 4—6-ribbed. Scapes single-flowered. Leaves pinnatifid; their lobes toothed or cut, acute.

Papaver nudicaule, *Linn.* *E. B. Supp.* 2681. *Lindley* 17. *Hooker* ed. 2. 256.

This gem of the Arctic regions was found by Professor Giesecké of Dublin growing singly among rocks and glens in the hills at Achilhead, in the North-west of Ireland. A perennial species, flowering in July and August. Whole plant, the corolla and stamens excepted, clothed with a tawny pubescence.



\*\* *Capsules smooth.*PAPAVER DUBIUM. *Long-smooth-headed Poppy.* TAB. 754.

Capsules smooth, oblong, angular. Stem many-flowered, hairy. Bristles of the flower-stalks closely adpressed. Leaves bipinnatifid.

*Papaver dubium*, *E. B.* 644. *Smith* III. 10. *Lindley* 17. *Hooker* ed. 2. 256. ed. 3. 259.

Not unfrequent in cultivated fields, especially where the soil is light or sandy. An annual, growing to the height of 1 or 2 feet, and producing its large, pale scarlet flowers in July. The hairs upon the stem spread horizontally, but those of the flower-stalks are always closely pressed upwards, giving them a silky appearance, which is the most unequivocal point of distinction between this and the following species.

PAPAVER RHŒAS. *Corn Poppy. Common red Poppy.* TAB. 755.

Capsule smooth, nearly globular. Stem many-flowered, bristly. Bristles of the flower-stalks spreading like those of the stem. Leaves pinnatifid, cut.

*Papaver Rhœas*, *E. B.* 645. *Smith* III. 11. *Lindley* 17. *Hooker* ed. 2. 256. ed. 3. 259.

One of the most troublesome weeds of the cornfield in all soils and situations, but claiming, from the rich and vivid scarlet of its large petals, to rank among the most beautiful of our wild flowers. An annual, flowering in June and July, well distinguished from *P. dubium* by the wide spreading hairs of the flower-stalks, shorter capsule, and many-rayed stigma. The red syrup of poppies, so well known as a gentle opiate for children, is prepared from the petals of this species.

PAPAVER SOMNIFERUM. *White Poppy.* TAB. 756.

Glabrous. Capsule nearly globular. Stigma many-rayed, deflexed at the margin. Leaves glaucous, stem clasping, unequally notched and divided.

*Papaver somniferum*, *E. B.* 2145. *Smith* III. 11. *Lindley* 17. *Hooker* ed. 2. 256. ed. 3. 259.

Having been long cultivated for medicinal purposes, the White Poppy has become so far naturalized as to be met with apparently wild in several parts of the kingdom. It is an annual, growing to the height of 3 or 4 feet, and flowers in July and August. Numberless varieties as to the colour and doubling of the petals are to be met with in gardens, of which they constitute some of the most glaring ornaments; but the large "poppy heads" of the druggists and herbalists are the produce of the more simple and natural form of the plant when the petals are white or but faintly tinged, and in general have a purple spot at the base, as represented in our figure. Opium is the inspissated juice obtained by wounding the unripe capsules of this species, which is very largely cultivated in the warm climates of

the East for the purpose. Numerous experiments have been made with a view of supplying our markets with this valuable drug from poppies of our own growth; but although English opium has been obtained in every respect equal, if not indeed superior in quality, to that imported from India or the Levant, the high value of land and expense of manual labour in this country are obstacles that will probably ever preclude its production here in sufficient quantity to supersede the necessity of a foreign supply. The seeds, of which each capsule contains from 30,000 to 40,000, are very pretty microscopic objects: they are destitute of the narcotic quality of the rest of the plant, and yield by expression a mild oil, nearly resembling that of olives, which is often adulterated with it. In some parts of Europe the Opium Poppy is grown in considerable quantities for this latter purpose, as well as for medicine, and cattle and poultry are fed and fattened on the solid portion that remains after expression.

GENUS CCLXXXII. HELIANTHEMUM. *Sun-Cistus*,  
or *Rock-Rose*.

*Nat. Order.* CISTINEÆ.

GEN. CHAR. *Calyx* of 3 equal leaves, with occasionally 2 smaller external ones. *Petals* 5. *Stigma* capitate. *Capsule* 3-valved.

An extensive genus, consisting chiefly of small, trailing, evergreen shrubs, a very small number only being herbaceous and even annual. They have entire, mostly opposite leaves, with or without stipules; and yellow, or more rarely white, or red fugitive flowers, in terminal unilateral racemes. They are destitute of active properties, but are very generally admired in cultivation for the beauty and delicacy of their fragile and short-lived flowers, and well adapted for ornamenting rock-work, especially where much exposed to the sun. The genus is eminently European.

\* *Shrubby; without stipules.*

HELIANTHEMUM CANUM. *Hoary Sun-Cistus*. TAB. 757.

Shrubby. Leaves opposite, exstipulate, petiolate; ovate or oblong, flat, hoary beneath. Racemes terminal, bracteate. Calyx-leaves 5, the inner 4-ribbed. Style twisted at the base, reflexed; at the apex inflexed. Seeds blackish.

*Cistus marifolius*, *E. B.* 396. *Smith* III. 23. *Helianthemum canum*, *Lindley* 36. *Hooker* ed. 2. 258. ed. 3. 261. *Cistus Anglicus*, *Linnaeus*.

A rare species, found hitherto only on alpine rocks in the North of England, and in Wales. We have met with it in tolerable abundance



on the rocks above the Great Orme's Head, Caernarvonshire. A small, rather erect shrub, 3 or 4 inches high, flowering in May and June. Flowers small, bright yellow.

**\*\*** *Herbaceous; without stipules.*

HELIANTHEMUM GUTTATUM. *Spotted annual Sun-Cistus.*  
TAB. 758.

Herbaceous, erect. Leaves oblong-lanceolate, exstipulate; the lower opposite, the upper alternate. Racemes without bractæ. Calyx-leaves 5. Style straight, very short: stigma capitate.

*Cistus guttatus*, Linn. E. B. 544. Smith III. 24. *Helianthemum guttatum*, Lindley 37. Hooker ed. 2. 258. ed. 3. 261.

A very rare species. It has been met with on Holyhead mountain, and on sandy pastures in the Isles of Jersey and Man; probably an emigrant from the South of Europe. An annual, flowering in June and July. Stem, leaves and calyx hairy, slightly fragrant, and somewhat viscid to the touch. Flowers bright yellow, with a purple spot at the base of each petal.

**\*\*\*** *Herbaceous; with stipules.*

HELIANTHEMUM LEDIFOLIUM. *Ledum-leaved Sun-Cistus.* TAB. 759.

Herbaceous, downy. Leaves lanceolate, with stipules. Flower-stalks solitary, erect; opposite to the leaves; shorter than the calyx. Styles straight. Capsules polished.

*Cistus ledifolius*, Linn. E. B. 2414. Smith III. 24. *C. salicifolius*, Hudson. *C. niloticus*, Linn., according to Hooker. *Helianthemum ledifolium*, Lindley 37. Hooker ed. 2. 258. ed. 3. 261.

Found hitherto only on Brent Downs, Somersetshire, and in the sandy fields of that neighbourhood overlooking the Bristol Channel. Root annual. Stem nearly erect. Leaves opposite below, alternate above. Flowers opposite to the alternate leaves, with pale yellow, inconspicuous, and very fugacious petals: they appear in June and July, and are succeeded by comparatively large, triangular, glossy capsules. Dr. Hooker considers this plant to be the *Cistus niloticus* of Linnæus, and that his true *C. ledifolius* is merely a glabrous variety of the same probably induced by cultivation.

**\*\*\*\*** *Shrubby; with stipules.*

HELIANTHEMUM VULGARE. *Common Sun-Cistus.* TAB. 760. & 760\*.

Shrubby, procumbent. Leaves stipulate; opposite, elliptic-oblong, nearly flat, green above, white and hairy beneath. Racemes terminal, bracteate. Calyx-leaves 5; the inner ones furrowed, and scarious at the edge. Style bent at the base, somewhat clavate at the apex. Seeds black.

*Cistus Helianthemum*, Linn. *E. B.* 1321. *Smith* III. 26. *Helianthemum vulgare*, Lindley 37. *Hooker* ed. 2. 258. ed. 3. 261. *Cistus tomentosus*, *E. B.* 2208, scarcely differs even as a variety : see Tab. 760\*.

This elegant little shrub is a great ornament to broken banks, and hilly and rocky pastures, on a chalky, limestone, or even a gravelly soil, flowering copiously throughout July and August ; each of its delicate, tremulous blossoms lasting but a few hours, and scattering its petals early in the afternoon. Leaves slightly revolute. Flowers rather large, seldom expanding more than one at a time upon each raceme. Petals roundish, bright yellow. The stamens when touched with a pin retire from the style, and lie down in a spreading form upon the petals.

**HELIANTHEMUM SURREJANUM.** *Dotted-leaved Sun-Cistus.*  
**TAB. 761.**

Shrubby, procumbent. Leaves stipulate ; opposite, ovate-oblong, hairy, and dotted beneath. Petals lanceolate. Stamens not longer than the germen.

*Cistus surrejanus*, Linn. *E. B.* 2207. *Helianthemum surrejanum*, Lindley 37. *H. vulgare*,  $\beta$ . *Hooker* ed. 2. 258. ed. 3. 262.

Rare. First discovered in the time of Dillenius growing in the neighbourhood of Croydon, Surrey, since by Mr. Borrer on the Sussex Downs ; always sparingly. Perhaps it ought only to be regarded as an accidental variety of *H. vulgare*, with depauperated flowers, and leaves preternaturally developed. However, the dotted leaves and lanceolate form of the petals, which are the chief points of distinction, we have found constant under cultivation, even in individuals raised from seed ; a circumstance that has induced us to retain it for the present as a distinct species. Flowers in July.

**HELIANTHEMUM POLIFOLIUM.** *White mountain Sun-Cistus.*  
**TAB. 762.**

Shrubby, procumbent, hoary. Leaves stipulate ; opposite, ovate-oblong or oblong-linear, more or less revolute at the edge. Racemes terminal, bracteate. Calyx-leaves 5, the inner ones furrowed, and scarious at the edge. Style bent at the base, clavate at the apex. Seeds black.

*Cistus polifolius*, Linn. *E. B.* 1322. *Smith* III. 27. *Helianthemum apenninum*, DeCand. Lindley 37. *H. polifolium*, *Hooker* ed. 2. 259. ed. 3. 262.

A rare species, found only in rocky and stony places near the sea in the south-western counties of England, as on Brent Downs, Somersetshire, Babbacombe rocks, and near Torquay, Devon. In habit it nearly approaches *H. vulgare*, but has white flowers, which come out in June and July.



GENUS CCLXXXIII. TILIA. *Lime.**Nat. Order.* TILIACEÆ.

GEN. CHAR. *Calyx* inferior, 5-parted, deciduous. *Petals* 5, sometimes with a scale (nectary) at the base of each. *Ger-men* of 5 2-seeded cells. *Fruit* coriaceous, rarely more than 1-celled, and perfecting a single seed.

Trees, often of large size, with alternate, simple, serrated leaves, deciduous stipules, and yellowish-green, fragrant flowers, disposed in cymes arising from the middle of linear bractææ. The wood of all the species is very light and soft, but durable; and the tough, pliant bark, readily separating into layers, is variously employed, in the North of Europe, under the name of Bast or Bass, for the manufacture of mats, baskets and cordage. Natives of Europe and North America.

TILIA EUROPÆA. *Common Lime. Linden-tree.* TAB. 763.

Petals without scales. Leaves heart-shaped, quite smooth, except a woolly tuft at the origin of each vein beneath. Cymes many-flowered. Fruit coriaceous, downy.

*Tilia europæa*, *E. B.* 610. *Smith* III. 17. *Hooker* ed. 2. 259. ed. 3. 262. *T. intermedia*, *DeCand.* *Lindley* 54.

Introduced at an early period into our groves and plantations, the Lime-tree has long been so far naturalized in these islands as to be found not unfrequently wild in our woods and thickets. A large, handsome tree, whose rapid growth, lively green foliage, and sweetly-scented flowers, have rendered it a general favourite. Its light, close-grained, durable wood, is valued by carvers on account of the ease with which it is worked, and much employed by them in the decoration of churches and palaces. The bark, tough and strong, separates readily into layers, and is the material of which the Russian or Bass mats are made. The family of Linnæus are said to have derived the name from a gigantic Lime- or Linden-tree, called in Swedish Linn, standing upon the farm occupied by his ancestors. In planting for effect, the Lime ought always to be associated with other trees, on account of the early fall of its leaves. Flowers in July.

TILIA GRANDIFOLIA. *Broad-leaved Lime-tree.* TAB. 763\*.

Leaves downy, especially beneath. Young shoots hairy. Umbels 3-flowered. Fruit woody, downy; turbinate, with prominent ribs.

*Tilia grandifolia*, *E. B. Supp.* 2720. *Smith* III. 18. *Lindley* 54. *Hooker* ed. 2. 259. ed. 3. 262.

A large tree, well distinguished from the preceding by its broad, cordate, acuminate, hairy leaves, the hairiness of the young branches, the 3-flowered umbel, and by the prominent angles of the fruit.

Though not unfrequent in woods and hedges, it must, like *T. Europæa*, be regarded as a naturalized species. Flowers in June and July.

**TILIA PARVIFOLIA.** *Small-leaved Lime-tree.* TAB. 764.

Leaves smooth above, glaucous beneath; with scattered, as well as axillary, hairy blotches. Umbels compound, many-flowered. Fruit roundish, brittle, nearly smooth.

*Tilia parvifolia*, *E. B.* 1705. *Smith* III. 20. *Lindley* 55. *Hooker ed.* 2. 259. *ed.* 3. 262.

Frequent in woods, especially in the eastern and southern counties of England, and considered to be the only species of Lime that is truly indigenous. Flowers in August.

**GENUS CCLXXXIV. NYMPHÆA.** *Water-Lily.*

*Nat. Order.* NYMPHÆACEÆ.

**GEN. CHAR.** *Calyx* of 4 or 5 leaves. *Petals* and *Stamens* numerous, inserted upon a fleshy disk which surrounds the ovarium and adheres to it, so that they appear to arise from the latter. Filaments petaloid. Fruit a many-celled, many-seeded capsule.

Perennial herbs, growing in quiet waters in every part of the world. They have floating, fleshy, cordate or peltate leaves, and conspicuous, white, blue, or red flowers. The rhizomæ, or creeping fleshy stems, and the seeds of many species, are eaten in some countries, but the farinaceous matter which abounds in the former requires repeated washings to free it from a bitter, astringent principle, that renders them unpalatable in a recent state.

**NYMPHÆA ALBA.** *White Water-Lily.* TAB. 765.

Leaves cordate, entire. Petals elliptic-oblong. Rays of the stigma 16, curved upward.

*Nymphæa alba*, *E. B.* 160. *Smith* III. 14. *Lindley* 15. *Hooker ed.* 2. 259. *ed.* 3. 263.

This beautiful aquatic, which decorates with almost Indian magnificence the placid surface of the lakes and slow streams of Northern Europe, abounds in its wild state in the more sequestered parts of the kingdom. Its flowers, which expand in June and July, present a highly interesting example to the student of vegetable morphology, in the gradual transition between the floral envelopes and stamens, which insensibly pass into each other, illustrative of the production of double flowers by culture. A small flowered variety is sometimes met with which approximates this species to *N. odorata* of North America. The flowers close towards night and sink below the surface of the water, arising and expanding again at sunrise.



GENUS CCLXXXV. NUPHAR. *Yellow Water-Lily.*

*Nat. Order.* NYMPHÆACEÆ.

GEN. CHAR. *Calyx* 5- or 6-leaved. *Petals* and *Stamens* numerous, inserted upon the receptacle. Fruit many-celled, many-seeded, superior.

Habit, that of the preceding genus, from which it chiefly differs in the almost total abortion of the disk, from which the petals and stamens originate; this, elevated in *Nymphæa* nearly as high as the apex of the ovarium, and rendering that organ apparently half inferior, is here confounded with the receptacle and shows its actual relative position. The flowers are uniformly yellow.

NUPHAR LUTEA. *Common Yellow Water-Lily.* TAB. 766.

Leaves cordate, the lobes meeting each other; petioles 2-edged.

*Calyx* 5-leaved. Stigma expanded, with from 14 to 20 rays; the border entire.

*Nymphæa lutea*, *Linnaeus*. *E. B.* 159. *Nuphar lutea*, *Smith* III. 15. *Lindley* 15. *Hooker ed.* 2. 260. *ed.* 3. 263.

Frequent in ponds, lakes and slow rivers throughout the kingdom, flowering in July. Flowers large, deep yellow, with a strong vinous or brandy-like odour, which, with the bottle-shape of its capsules, has obtained for it the provincial name of Brandy-bottle.

NUPHAR PUMILA. *Least Yellow Water-Lily.* TAB. 767.

Leaves cordate, the lobes rather distant; petioles 2-edged. *Calyx* 5-leaved. Stigma toothed on the margin. Fruit furrowed upwards.

*Nuphar minima*, *E. B.* 2292. *N. Pumila*, *Smith* III. 16. *Lindley* 15. *Hooker ed.* 2. 260. *ed.* 3. 263.

A native of the highland lakes of Scotland, where it flowers in July and August. It is scarcely possible to distinguish this species by positive characters from the American *N. Kalmiana*, with which Professor Hooker in his *Fl. Scot.* confounds it.

ORDER II. DI-PENTAGYNIA.

GENUS CCLXXXVI. PÆONIA. *Pæony.*

*Nat. Order.* RANUNCULACEÆ.

GEN. CHAR. *Calyx* 5-leaved. *Petals* 5 to 10, concave, nearly orbicular. Pericarps 2 to 5 many-seeded follicles, crowned with the bilamellar stigmas.

Perennial plants with fascicled roots, natives of the temperate parts of Europe and Asia. Their large showy flowers presenting various shades of crimson, purple, and white, recommended them at an early period to garden culture, and many beautiful varieties of the more favoured species have rewarded the skill of our florists. The most celebrated is the Tree Pæony, or Moutan of the Chinese, which by long cultivation has almost lost its herbaceous character, and become half shrubby: it occupies about the same rank in Chinese floriculture, as that of the Rose in Western Europe, and its varieties are not less highly prized. Our only native species of Pæonia can scarcely be indigenous, being confined to a solitary island in the Severn.

PÆONIA CORALLINA. *Entire-leaved Pæony.* TAB. 768.

Leaves biternate, smooth; segments ovate, undivided. Follicles downy, recurved.

*Pæonia corallina*, *E. B.* 1513. *Smith* III. 29. *Lindley* 14. *Hooker ed.* 2. 260. *ed.* 3. 264.

Discovered in 1803 by F. B. Wright, Esq. growing abundantly in the rocky clefts of the island called Steep Holmes in the Severn, where it flowers profusely in May and June, and seems to ripen its seed in tolerable abundance. The common double Pæony of the gardens is not a variety of this, but of the *P. Officinalis* of Linnæus, a very distinct species.

GENUS CCLXXXVII. DELPHINIUM. *Larkspur.*

*Nat. Order.* RANUNCULACEÆ.

GEN. CHAR. *Calyx* coloured, irregular, deciduous; the upper leaf produced at the base in the form of a spur. *Petals* 4; the two upper ones elongated at the base into appendages contained within the spur.

An extensive genus of herbs, natives of the northern parts of both continents. They have all divided leaves, and blue flowers, rarely passing into pink and white. They are chiefly valuable as garden ornaments; some, as *D. Staphisagria*, are employed medicinally, but rarely as internal remedies on account of their acridity, which renders them even in small doses dangerous. The active principle of the genus has been obtained in the alkaloid form, and named *Delphine*.

DELPHINIUM CONSOLIDA. *Field Larkspur.* TAB. 769.

Stem erect, branched. Flowers in lax racemes. Pedicles longer



than the bracteæ. Petals combined; inner spur of one piece. Follicles smooth.

*Delphinium consolida*, *E. B.* 1839. *Smith* III. 30. *Lindley* 13. *Hooker ed.* 2. 260. *ed.* 3. 264.

This beautiful annual, the tall, branching Larkspur of the gardens, abounds on the open chalky or sandy fields in some parts of Cambridge, Suffolk, and Kent; varying in the colour of its flowers, which come out in June and July: they are occasionally red, pink, or white, but generally of the brilliant blue that is their predominant tint under cultivation. Stem upright, 2 to 3 feet high, with numerous slender, alternate, spreading branches. Leaves sessile, downy, divided into many linear segments. Flowers thinly set, in long terminal clusters. Spur ascending, downy, as long as the petals. Capsule solitary, smooth.

GENUS CCLXXXVIII. ACONITUM. *Monk's-hood.*  
*Wolf's-bane.*

*Nat. Order.* RANUNCULACEÆ.

GEN. CHAR. *Calyx* petaloid, irregular; the upper leaf helmet-shaped. The 2 upper petals (*nectaries*) with long claws, expanding into a sac at the apex, and concealed beneath the helmet.

Hardy herbaceous plants, natives of the northern hemisphere. They have all palmate or pedatifid leaves, and perennial, fleshy roots. Flowers various shades of blue and purple, sometimes passing into or variegated with white; in a few instances only, pale yellow or cream colour. The genus contains upwards of a hundred known species, all highly ornamental in the garden and shrubbery, but of little economical utility: some few are employed in medicine, but they are dangerous remedies, the acrid and caustic properties of the Ranunculaceæ being in no plants of the order more powerfully developed than in the Aconites.

ACONITUM NAPELLUS. *Common Monk's-hood, or Wolf's-bane.* TAB. 769\*.

Helmet arched at the back. Lateral petals hairy on the inner side. Follicles mostly 3, smooth. Leaves deeply 5-cleft, the lobes cut into linear segments, furrowed above.

*Aconitum napellus*, *E. B. Supp.* 2730. *Smith* III. 31. *Lindley* 13. *Hooker ed.* 2. 260. *ed.* 3. 264.

Naturalized in some parts of England, as on the banks of the Teme in Herefordshire; near Ford, Somersetshire; and below Staverton Bridge, Devonshire. Stems from 3 to 5 feet high, flowering in June and July. The whole plant is highly poisonous: a single dram of the root has been known to prove fatal.

GENUS CCLXXXIX. AQUILEGIA. *Columbine*.

Nat. Order. RANUNCULACEÆ.

GEN. CHAR. *Calyx* 5-leaved, petaloid, deciduous. *Petals* 5, gaping above, elongated downwards into a hollow, horn-shaped spur, projecting between the leaves of the calyx. *Follicles* 5.

Ornamental herbs with purple, blue, or white flowers, divided leaves, and fibrous perennial roots. The genus, which is small, containing about 15 known species, is confined to the north temperate zone. The plants are less acrid than the rest of their order, and the common Columbine has been employed medicinally as an astringent, but instances are on record of its proving fatal in overdoses.

AQUILEGIA VULGARIS. *Common Columbine*. TAB. 770.

Spur of the petals incurved. *Follicles* hairy. *Stem* leafy, many-flowered, smooth. *Leaves* glabrous. *Styles* as long as the stamens. *Aquilegia vulgaris*, *E. B.* 297. *Smith* III. 33. *Lindley* 13. *Hooker* *ed.* 2. 261. *ed.* 3. 264.

Found wild in woods, thickets and pastures in many parts of England and Wales, though probably in its origin a wanderer from the garden. *Leaves* mostly radical, on long petioles, twice ternate, obtusely lobed; more or less glaucous as well as the stem, which rises a foot or 18 inches high, bearing a few sessile leaves, and several drooping, purple, rarely rose-coloured or white, flowers. The inner series of stamens is often abortive, in which case the filaments are sometimes united, forming a plaited membrane around the germens, as shown in our figures. *Flowers* in June.

## ORDER III. HEXAGYNIA.

GENUS CCXC. STRATIOTES. *Water-Aloe*.

Nat. Order. HYDROCHARIDEÆ.

GEN. CHAR. *Spathe* 2-leaved, persistent, 1-flowered. *Calyx* superior, 3-cleft. *Corolla* of 3 petals. *Styles* bifid. *Fruit* fleshy, taper-pointed, with 6 sides and 6 cells. *Seeds* many, angular.

Water plants with the foliage of Bromelia or Aloe and the fructification of Hydrocharis: growing submersed except during the short period of inflorescence.



STRATIOTES ALOIDES. *Water-Aloe. Water-Soldier.* TAB. 771.

Leaves sword-shaped, channeled, with a prominent middle rib, and sharp marginal prickles.

*Stratiotes aloides*, *E. B.* 379. *Smith* III. 34. *Lindley* 254. *Hooker* ed. 2. 261. ed. 3. 265.

This singular plant appears to be indigenous to the low eastern counties of England, abounding in lakes, ponds, and the deep ditches of the fens of Lincolnshire, Cambridgeshire and Norfolk, sometimes so copiously as to occupy the surface to the exclusion of all other plants. In other parts of the island it is of rare occurrence, and has probably been planted, as in the Scottish lochs, and in the pools on Wandsworth Common, Surrey, in which latter place it was originally thrown by the late Mr. Dickson. The parent plant, rooted in the mud at the bottom of the water after flowering, sends out leaf-buds at the extremity of long runners, which rise to the surface, protrude roots, blossom, and then sink to the bottom, where they become fixed in the mud, sometimes ripen their seeds, and always become in their turn the parents of another race of offsets, which rise to the surface in the ensuing year. Leaves radical, forming a star-like tuft: they are rigid, brittle and pellucid, with sharp teeth and points. Several scapes from 4 to 6 inches high arise from each tuft, each bearing a solitary, large, white flower, proceeding from a compressed 2-leaved spathe, and expanding about July, shortly after which the plant sinks. The flowers are sometimes uni-sexual.

## ORDER IV. POLYGYNIA.

GENUS CCXCI. THALICTRUM. *Meadow-Rue.*

*Nat. Order.* RANUNCULACEÆ.

GEN. CHAR. *Calyx* 4- or 5-leaved, somewhat petaloid, caducous. *Corolla* wanting. *Pericarps* (caryopsides) without awns.

Hardy herbaceous plants, natives of Europe, Asia, and North America. They have yellow roots, compound leaves, and yellow, greenish, or purplish, paniced flowers. All the species are perennial.

THALICTRUM ALPINUM. *Alpine Meadow-Rue.* TAB. 772.

Stem simple, nearly leafless. Raceme simple, terminal. Flowers drooping.

*Thalictrum alpinum*, *E. B.* 262. *Smith* III. 40. *Lindley* 8. *Hooker* ed. 2. 261. ed. 3. 265.

Frequent on the mountains of the north of England, Wales, and Scotland, growing in the moist fissures of the rocks, and on the margins of rills. Stems creeping and rooting beneath the soil, sending up a few biternate leaves on long purplish petioles; leaflets round-

ish, crenate, or lobed, of a deep glossy green. Flower-stems erect, naked, or bearing a single leaf about midway, and terminating in a raceme of 8 or 10 flowers. The number of stamens varies from 8 to 12, that of the pistils from 2 to 4. Flowers in July.

**THALICTRUM MINUS.** *Lesser Meadow-Rue.* TAB. 773.

Leaves doubly or triply pinnate; leaflets 3-cleft, glaucous on both sides. Panicle diffuse, its branches alternate. Flowers drooping. *Thalictrum minus*, *E. B.* 11. *Smith* III. 41. *Lindley* 9. *Hooker* ed. 2. 261. ed. 3. 265.

A native of chalky and limestone soils in several parts of England, though chiefly in mountainous districts, or near the sea-coast. It is an elegant species, well calculated for the decoration of rock-work, being compact in its growth, and extremely endurant. Stem 9 inches to a foot high, zigzag, generally glaucous as well as the foliage; leaflets small, rigid, tipped with purple. Flowers in June and July.

**THALICTRUM MAJUS.** *Greater Meadow-Rue.* TAB. 774.

Leaves tripinnate; leaflets trifid, roundish, glaucous beneath. Branches of the panicle aggregate, somewhat umbellate. Flowers drooping.

*Thalictrum majus*, *E. B.* 611. *Smith* III. 42. *Lindley* 9. *Hooker* ed. 2. 261. ed. 3. 265.

It grows in similar situations with the last, but chiefly in the northern counties and in Scotland. Its principal features of distinction are the larger size, more luxuriant habit, and the dark-green, not glaucous, hue of the upper surface of the leaves; with these exceptions, the characters of the present plant are not very dissimilar to those of *T. minus*, of which it is by some botanists suspected to be only a variety. Being only acquainted with the ordinary state of the two, as figured in our plates, we consider them sufficiently distinct, as cultivation does not alter either, even in plants raised from seed. Mr. Christy, however, as quoted by Dr. Hooker, has seen numerous specimens, showing all the intermediate stages between *T. majus* and *T. minus*. Flowers in June and July. Stem 1 to 2 feet high.

**THALICTRUM FLAVUM.** *Common Meadow-Rue.* TAB. 775.

Stem erect, branched, furrowed, leafy. Leaves bipinnate; leaflets broadly obovate or wedge-shaped, trifid. Panicle compact, subcorymbose. Flowers erect.

*Thalictrum flavum*, *E. B.* 367. *Smith* III. 42. *Lindley* 9. *Hooker* ed. 2. 262. ed. 3. 266.

Frequent in osier beds, wet meadows, and on the banks of rivers and ditches, rising to the height of 2 or 3 feet, and flowering in June and July. The leaflets vary in breadth, proportion and division, but the species is obviously distinguished by its large, compact panicle of upright flowers. It is more acrid than our other indigenous spe-



cies, and a cataplasm made of the bruised leaves acts as a slight blister.

GENUS CCXCII. CLEMATIS. *Traveller's Joy. Virgin's Bower.*

*Nat. Order.* RANUNCULACEÆ.

GEN. CHAR. *Calyx* 4- to 8-leaved, coloured. *Petals* wanting. *Pericarps* (cariopsides) numerous, terminated by a long, mostly bearded or feathery awn.

Climbing shrubs, or herbs with perennial roots. They have opposite, generally divided leaves, and ornamental flowers of various hues, but chiefly white or different shades of blue and purple. Natives of most parts of the world.

CLEMATIS VITALBA. *Common Traveller's Joy.* TAB. 776.

Stem climbing. Leaves pinnate; leaflets oval heart-shaped, lobed and cut. Petioles twining, permanent. Panicles forked, scarcely longer than the leaves.

*Clematis vitalba*, *E. B.* 612. *Smith* III. 39. *Lindley* 8. *Hooker ed.* 2. 262. *ed.* 3. 266.

This elegant climber is almost exclusively confined to districts where the substratum is chalk or limestone. In such places it overruns the hedges and thickets in great abundance, often covers the broken precipice with a rich mantling tapestry, or hangs in festoons by the roadside, gratifying the traveller with the fragrance of its white blossoms, which are produced about June and July. The permanence of the twining petiole, which acts as a tendril, is an admirable contrivance for the support of the plant, whose long perennial stems not unfrequently extend from 10 to 20 feet in the course of a single summer. The fruit terminating in a long silvery plume is a beautiful object in the autumn.

GENUS CCXCIII. ANEMONE. *Anemone. Wind-flower.*

*Nat. Order.* RANUNCULACEÆ.

GEN. CHAR. *Involucrum* of 3 divided leaves, more or less distant from the flower. *Calyx* coloured, confounded with the corolla; *sepals* and *petals* 5 to 20 collectively. *Pericarps* with or without awns.

Dwarf perennial herbs, with divided leaves and showy flowers. The genus is distributed in greater or less profusion over the temperate and colder regions of the earth, approaching the tropics only in alpine districts. Plants all acrid.

ANEMONE PULSATILLA. *Pasque-Flower.* TAB. 777.

Leaves doubly pinnate, cut, with linear lobes. *Involucrum* in deep

linear segments. Flower solitary, nearly erect. Petals 6. Awns of the fruit long, feathery.

*Anemone Pulsatilla*, *E. B.* 51. *Smith* III. 35. *Lindley* 9. *Hooker* ed. 2. 262. ed. 3. 266.

Plentiful in high chalky pastures in several parts of England, flowering in April and May. Flowers deep purple, large and handsome, rarely white. Petals clothed with long silky hairs externally. Whole plant pubescent. The great beauty of its early flowers recommends it to cultivation, but it requires an open, dry situation, and will not long exist near London and other smoky towns.

**ANEMONE NEMOROSA.** *Wood Anemone.* TAB. **773.**

Involucrum of 3 ternate, or quinate, stalked, lobed and cut leaves. Flower solitary. Petals 6, elliptical, veined. Pericarps pointed, awnless.

*Anemone nemorosa*, *E. B.* 355. *Smith* III. 36. *Lindley* 9. *Hooker* ed. 2. 262. ed. 3. 266.

Common in woods, thickets, and moist heathy, alpine pastures throughout the kingdom; its bright white flowers tinged externally with purple being one of the earliest harbingers of summer: they expand only in bright weather, drooping, and closing their petals on the approach of rain. The root, or rather underground stem, creeps horizontally a few inches below the surface, branching in every direction, and forms in alpine situations one of the many natural aids that serve to retain the loose vegetable soil on hills and mountains, and prevent it from being washed into the valleys. Flowers in April.

**ANEMONE RANUNCULOIDES.** *Yellow Wood Anemone.* TAB. **779.**

Involucrum of 3 or 5 shortly stalked, cut and toothed leaves. Flowers solitary or in pairs. Petals 5 or 6, elliptical. Pericarps awnless. *Anemone Ranunculoides*, *E. B.* 1484. *Smith* III. 38. *Lindley* 10. *Hooker* ed. 2. 263. ed. 3. 266.

A rare species and probably naturalized. It was added to the English Flora by Mr. Hudson, and has been met with in woods near King's Langley, Herts, and Wrotham, Kent. In habit nearly resembling *A. nemorosa*, but the flowers, which come out in April, are of a bright golden yellow.

**ANEMONE APENNINA.** *Blue Mountain Anemone.* TAB. **780.**

Leaves triternate, segments lanceolate, cut and toothed. Involucrum of 3 stalked, deeply cut, ternate leaves. Flower solitary. Petals numerous, lanceolate. Pericarps pointed, awnless.

*Anemone apennina*, *E. B.* 1062. *Smith* III. 36. *Lindley* 9. *Hooker* ed. 2. 263. ed. 3. 266.

This beautiful species is, like *A. Ranunculoides*, scarcely indigenous, though met with apparently wild in several parts of England. In the woods of Italy it supplies the place of our *A. nemorosa*, and the fine sky-blue tint of its large flowers occasioned its early introduction to our gardens, whence the seed has no doubt been occasionally distributed in the neighbouring woods. Petals varying from 12 to 20, recurved, hairy on the outside. Flowers in April.



GENUS CCXCIV. ADONIS. *Pheasant's Eye*.

Nat. Order. RANUNCULACEÆ.

GEN. CHAR. *Calyx* 5-leaved. *Petals* 5 to 15, the claw naked. *Pericarps* tipped with the hardened style, but not awned.

A very beautiful genus of hardy caulescent annual or perennial herbs, with solitary yellow or red flowers and finely divided leaves. Chiefly European.

ADONIS AUTUMNALIS. *Corn Adonis*, or *Pheasant's Eye*. TAB. 781.

Stem branched. *Petals* about 8, obcordate, concave, connivent; scarcely longer than the calyx. *Pericarps* collected into an ovate head.

*Adonis autumnalis*, *E. B.* 308. *Smith* III. 43. *Lindley* 9. *Hooker* ed. 2. 263. ed. 3. 267.

Not very common, but found in many parts of the kingdom, generally among corn or clover, with the seed of which it may have been originally imported, though, like the common flax and some other hardy exotics, long since naturalized. Stem striated, branched, about a foot high. Leaves alternate, thrice compound, with linear segments. Flowers solitary, terminating the branches; petals bright scarlet; anthers crimson or purple. The generic name seems to have been bestowed from this species, in allusion to the fate of Adonis, and to the deep blood-red hue of its flowers. The French call the plant "*Goutte de sang*." It is an annual, flowering throughout the summer and autumn, and not as the trivial name imports in the latter only: we have gathered it from the beginning of May to the end of November.

GENUS CCXCV. RANUNCULUS. *Crowfoot*. *Buttercup*.

Nat. Order. RANUNCULACEÆ.

GEN. CHAR. *Calyx* 5-leaved, rarely 3-leaved. *Petals* 5, rarely 8 to 12; with a nectariferous scale or pore at the base. *Pericarps* without awns, more or less compressed, arranged in a globular or cylindrical head.

An extensive genus of hardy herbaceous plants, natives of temperate and cold regions throughout the world, but most abundant in the northern hemisphere. Foliage various. Flowers generally yellow, sometimes white; the latter hue rarely, under cultivation, passing into crimson and various shades of purple, as in *R. asiaticus*.

The type of a large and well-marked natural order remarkable for powerful acrid and caustic properties.

\* *Leaves simple.*RANUNCULUS LINGUA. *Great Spear-wort.* TAB. 782.

Leaves lanceolate, pointed, sub-serrated, sessile, semiamplexicaul. Stem erect. Root fibrous.

*Ranunculus lingua*, *E. B.* 100. *Smith* III. 46. *Lindley* 10. *Hooker* ed. 2. 263. ed. 3. 267.

Far from common, though less rare than generally considered, being met with in ditches and watery places in many parts of the kingdom. It is well distinguished from the next species, *R. flammula*, by its erect growth, sessile leaves, and larger flowers, which indeed exceed those of any other native species. Stem 1 to 3 feet high. The bright yellow flowers come out in July. Perennial.

RANUNCULUS FLAMMULA. *Lesser Spear-wort.* TAB. 783.

Root-leaves ovato-lanceolate, sub-serrated; petiolate: those of the stem linear-lanceolate. Stem declining and rooting toward the base. Root fibrous.

*Ranunculus flammula*, *E. B.* 387. *Smith* III. 45. *Lindley* 10. *Hooker* ed. 2. 264. ed. 3. 267. *R. reptans*, *Lightfoot Fl. Scot.*, is a small creeping variety of this.

A perennial species, frequent in marshes and watery places throughout the kingdom, flowering from June to September. Though presenting numerous variations in habit and in the form of its leaves, it is scarcely possible for the most superficial observer to confound this with the preceding. Flowers bright gold-colour; the nectariferous pore at the base of the petals sometimes very minute.

RANUNCULUS GRAMINEUS. *Grass-leaved Crowfoot.* TAB. 784.

Leaves linear-lanceolate, striated, entire, sessile, stem erect, smooth; few-flowered. Root fascicled. Nectariferous scale tubular.

*Ranunculus gramineus*, *E. B.* 2306. *Smith* III. 46. *Lindley* 10. *Hooker* ed. 2. 264. ed. 3. 268.

Admitted into the British Flora by Dr. Withering, who mentions having received specimens from North Wales through Mr. Pritchard. Its natural situation is in dry, mountainous pastures. Stems slender, about a foot high. Leaves mostly radical, glaucous, without serrature, but mucronate at the extremity. Flowers larger than those of *R. flammula*, bright yellow: they come out in May and June. Perennial.

RANUNCULUS FICARIA. *Pile-wort. Lesser Celandine.* TAB. 785.

Leaves cordate, smooth, angular or crenate; petiolate. Calyx 3-leaved. Petals numerous, elliptic-oblong. Root fascicled.

*Ranunculus Ficaria*, *E. B.* 584. *Smith* III. 46. *Lindley* 10. *Hooker* ed. 2. 264. ed. 3. 268. *Ficaria verna*, *Hudson*. *Ficaria ranunculoides*, *Decand.*

The glossy foliage and glistening, golden, starlike flowers of the Pile-wort are among the earliest and most frequent decorations of our groves, thickets, and shaded pastures in the spring. The root is



perennial, consisting of a bundle of long fleshy knobs, intermingled with a few simple fibres. The leaves on long petioles, somewhat succulent and brittle. Flowers erect, solitary; terminating the stems, which seldom rise more than a few inches. Calyx sometimes 5-leaved. Petals 8, 10, or 12, rarely more.

**\*\* *Leaves lobed, or divided. Pericarps smooth.***

**RANUNCULUS ALPESTRIS. *Alpine White Crowfoot.* TAB. 786.**

Leaves very smooth; radical ones somewhat heart-shaped, obtuse, in three deep, lobed segments; stem leaf lanceolate, entire. Flower mostly solitary. Calyx smooth, bordered.

*Ranunculus alpestris*, *E. B.* 2390. *Smith* III. 49. *Lindley* 11. *Hooker* ed. 2. 264. ed. 3. 268.

Gathered by Mr. G. Don by the sides of rills on the Clova mountains, Angusshire, flowering sparingly in the month of May. Root fibrous, perennial. Stem smooth, 2 to 6 inches high, generally bearing a single flower, and 1, or at most 2, small linear-lanceolate leaves. Root-leaves several, on long channelled petioles; deeply divided into 3 principal lobes, which are again deeply lobed and cut into segments. Flower large, bright white. A frequent plant on the Austrian Alps, where, according to Jacquin, it blooms immediately after the melting of the snow. Haller informs us it is one of the most acrid of its tribe, raising blisters on the skin; yet, he adds, the alpine hunters chew it by way of refreshment.

**RANUNCULUS SCLELERATUS. *Celery-leaved Crowfoot.* TAB. 787.**

Stem erect, hollow, branched. Leaves smooth; lower ones on long petioles, orbicular, reniform, or palmate, with 3 obtuse cut segments; the upper ones fingered, in 3 linear, notched lobes. Fruit forming an oblong or cylindrical head.

*Ranunculus sceleratus*, *E. B.* 681. *Smith* III. 48. *Lindley* 11. *Hooker* ed. 2. 264. ed. 3. 268.

Common in watery places and by the sides of pools and ditches, where it may be found in flower and seed throughout the summer and autumn, varying in height from a few inches to 2 feet or more. Root annual. The lower leaves, which come out in the spring, are broad, almost orbicular, and have the appearance of being highly varnished. Flowers very small, yellow. It is the most caustic of our native Ranunculi; in childhood we have had our hands inflamed, and even blistered, by carelessly gathering and carrying it in the wild bouquet during hot weather. Strolling beggars are said sometimes to employ it to ulcerate their feet, for the purpose of exciting compassion.

**RANUNCULUS AURICOMUS. *Wood Crowfoot. Goldilocks.* TAB. 788.**

Stem erect, many-flowered. Radical leaves reniform, 3-parted, the lobes deeply cut and notched; those of the stem divided to the base into linear segments. Calyx coloured. Petals with a naked pore at the base.

*Ranunculus auricomus*, *E. B.* 624. *Smith* III. 47. *Lindley* 10. *Hooker* ed. 2. 264. ed. 3. 268.

A native of dry woods and shady places, and not unfrequent, though less common than *R. acris* and some other allied species with which a novice would be liable to confound it; but from which it is well distinguished by the absence of the little scale on the claw of the petals, and by wanting the acrid flavour that characters the rest of the Crowfoots, whence it is sometimes called Sweet Wood Crowfoot. Perennial. Stems about a foot high, round, slender. Flowers from April to June.

**RANUNCULUS ACRIS.** *Upright Meadow Crowfoot. Butterflower. Buttercup.* **TAB. 789.**

Stem erect, covered with close hairs. Leaves tripartite, their segments acutely trifid, cut and notched; those of the uppermost linear, entire. Peduncles rounded. Calyx spreading. Petals with a scale at the base.

*Ranunculus acris*, *E. B.* 652. *Smith* III. 51. *Lindley* 11. *Hooker* ed. 2. 265. ed. 3. 268.

Very common in meadows and pastures, flowering in June and July. Perennial. The scale at the base of the petal distinguishes it from *R. auricomus*, the spreading calyx from *R. bulbosus* and *R. hirsutus*; and the rounded peduncle from *R. repens*. The popular names Butterflower and Buttercup were bestowed upon this and some other species of Crowfoot, under the idea that the deeper colour of butter made during their flowering season is derived from the cows feeding upon their brilliant yellow flowers; but their acridity is generally so great that neither cows nor horses will touch them, however bare the pasture may be of more grateful herbage.

**RANUNCULUS REPENS.** *Creeping Crowfoot.* **TAB. 790.**

Scions creeping. Leaves compound, with 3 petiolated leaflets, which are trilobate and notched in the lower ones, in the uppermost entire. Peduncles furrowed. Calyx spreading.

*Ranunculus repens*, *E. B.* 516. *Smith* III. 51. *Lindley* 11. *Hooker* ed. 2. 265. ed. 3. 268.

Frequent in moist meadows and pastures, where it is the most troublesome weed of its genus, its creeping scions destroying the grass as they extend. This habit and the spreading calyx especially distinguish it from *R. bulbosus*. Flowers from June to September. Perennial.

**RANUNCULUS BULBOSUS.** *Bulbous Crowfoot. Buttercup.* **TAB. 791.**

Root a knob. Stem upright, many-flowered. Leaves compound, with 3 petiolated trilobate and cut leaflets. Peduncles furrowed. Calyx reflexed.

*Ranunculus bulbosus*, *E. B.* 515. *Smith* III. 49. *Lindley* 11. *Hooker* ed. 2. 265. ed. 3. 269.

Equally common with the two preceding, from which its reflexed calyx and fleshy bulblike root at once distinguish it. Stem about a



foot high, hairy, as well as the leaves, whose segments, especially those of the uppermost, are always more or less tipped with purple. Perennial. Flowers in May and June.

\*\*\* *Leaves lobed or divided. Pericarps tuberculated or mucronated.*

RANUNCULUS HIRSUTUS. *Pale Hairy Crowfoot.* TAB. 792.

Root fibrous. Stem erect, many-flowered, hairy. Leaves trilobate or tripartite, the lobes cut and divided. Calyx reflexed. Pericarps margined and tuberculated.

*Ranunculus hirsutus*, *E. B.* 1504. *Smith* III. 50. *Hooker* ed. 2. 265. ed. 3. 269.

*R. Philonotis*, *Ehrh.* *Lindley* 11. A small variety is *R. parvulus*, *Linn. Mant.* 79. and *Smith Fl. Brit.*

Not unfrequent in meadows and waste ground, especially in a moist soil, in places liable to be occasionally overflowed, or to have water lie on them during the winter. In the low tracts about London it is often abundant. An annual species. Flowers from June to October. Whole plant hairy. Fruit compressed, margined, rough on both sides with small, irregular, prominent, sharp tubercles, by which, and by the fibrous root, it is readily distinguished from *R. bulbosus* with which it agrees in the reflexed calyx.

RANUNCULUS ARVENSIS. *Corn Crowfoot.* TAB. 793.

Stem erect, much branched, many-flowered. Leaves once or twice 3-cleft, segments linear-lanceolate. Calyx spreading. Pericarps rough with prominent points.

*Ranunculus arvensis*, *E. B.* 135. *Smith* III. 52. *Lindley* 11. *Hooker* ed. 2. 265. ed. 3. 269.

An annual species, not unfrequent in corn-fields, especially in a dry soil, flowering in June and July. Herb pale-coloured, slightly hairy. Flowers small, pale yellow. Fruit compressed, armed on the sides with strong, prominent prickles, that sometimes terminate in a hook. It possesses the acrid quality of its genus in a high degree; M. Brugnon, in *Mém. de l'Acad. de Turin*, vol. iv., relates its poisonous effects on sheep, which eat it greedily, as do cows and horses. The *penchant* of the two latter for so caustic a plant is doubtful, though they might probably not be capable of avoiding it in a pasture as they do the other species, on account of its slender habit. With us it generally grows where it is not accessible to cattle of any kind; but the husbandman would do well to guard against it in fallow fields and pastures in the vicinity of corn-land.

RANUNCULUS PARVIFLORUS. *Small-flowered Crowfoot.* TAB. 794.

Stem prostrate. Leaves roundish, hairy, 3-lobed, and sharply notched. Peduncles opposite the leaves. Calyx as long as the petals. Pericarps rough with hooked tubercles.

*Ranunculus parviflorus*, *E. B.* 120. *Smith* III 53. *Lindley* 11. *Hooker* ed. 2. 265. ed. 3. 269.

An annual species, growing in corn-fields and in dry sandy or gravelly places in several parts of Great Britain and Ireland, though more frequently in the southern counties. It flowers about May and June. Herb prostrate, very hairy; the flowers small, yellow, with narrow petals, one or more of which are generally wanting. Well distinguished by the lateral position of its peduncles, which are always opposite to the leaves.

\*\*\*\* *Pericarps transversely wrinkled (smooth in R. pantothrix). Petals white with yellow claws. Aquatic.*

RANUNCULUS AQUATILIS. *Water Crowfoot.* TAB. 795.

Stem submersed. Lower leaves under water, in capillary segments; the upper ones floating, somewhat orbicular, 3-lobed; the lobes notched and divided. Petals obovate, larger than the calyx. Fruit hispid (or nearly glabrous?).

*Ranunculus aquatilis*, *E. B.* 101. *Smith* III. 54. *Lindley* 12. *Hooker ed.* 2. 263. *ed.* 3. 267.

One of the most frequent ornaments of our ponds, lakes, and slow streams, whose surface in the height of the flowering season, May, appears at a little distance as covered with a mantle of silver. It varies in habit, and in the form and proportion of its leaves, according to the depth and stillness of the water; occasionally presenting almost every grade of transition between the capillary segments of the lower and the broad wedge-shaped lobes of the upper or floating leaves, whose surface is often so much dilated as to give them a pel-tate appearance. Where the plants grow much crowded, and in shallow water, the broad leaves are sometimes wanting, but it cannot under any circumstances be confounded with the next species. Perennial.

RANUNCULUS PANTOTHRIX. *Small-flowered Water Crowfoot.*

Stem submersed. Leaves all in capillary segments; their general outline orbicular. Petals small, scarcely longer than the calyx. Fruit smooth.

*Ranunculus pantothrix*, *Decand.* *Lindley* 12. *R. circinatus*, *Sibthorpe*. *R. aquatilis*,  $\beta$ ? and  $\gamma$ , *Hooker ed.* 2. 263. *ed.* 3. 267.

Less frequent than the preceding, a variety of which is commonly mistaken for it; whence the difference of opinion between botanists in regard to its specific identity. If it be a variety only, its derivation must be sought from *R. hederaceus*, which it resembles in inflorescence, not from *R. aquatilis*. We have observed it for many years both wild in the same habitats, and under cultivation with the two latter, without being able to detect any change of character that could be regarded as indicative of transition between the three. Perennial. Flowers from May to August. We have generally met with it in deep-water ditches, where its densely matted leaves give almost an appearance of solidity to the surface.

A figure of this plant will be published shortly in the continuation



of the Supplement to the original edition of English Botany, which is now in progress.

**RANUNCULUS** HEDERACEUS. *Ivy-leaved Crowfoot.* **TAB. 796.**

Stem creeping. Leaves smooth, roundish, kidney-shaped, with 3 or 5 rounded, entire lobes. Petals scarcely longer than the calyx. Stamens 5 to 10, seldom more. Fruit roundish, wrinkled.

*Ranunculus hederaceus*, *E. B.* 2003. *Smith* III. 54. *Lindley* 11. *Hooker* ed. 2. 263. ed. 3. 267.

A common plant in shallow ponds and rivulets, and in damp places where water has stood through the winter. The whole herb is juicy, smooth and shining. Leaves all floating, or spreading on the moist ground, sometimes marked upon the upper surface with a brown spot. Flowers small, produced from June to September. Perennial.

**GENUS CCXCVI. TROLLIUS.** *Globe-Flower.*

*Nat. Order.* **RANUNCULACEÆ.**

**GEN. CHAR.** *Calyx* petaloid, 5- to 15-leaved, deciduous. *Petals* 5 to 15, small, linear, tubular at the base. *Follicles* many-seeded.

A small genus of hardy herbaceous plants, natives of the northern parts of Europe, Asia and America. They have all palmate, multifid leaves, and yellow, or orange-coloured flowers. Roots fibrous and perennial.

**TROLLIUS** EUROPÆUS. *Common Globe-flower.* *Locker Gow-lans.* **TAB. 797.**

Calyx of about 15 concave, converging leaves. Petals nearly as long as the stamens.

*Trollius europæus*, *E. B.* 28. *Smith* III. 56. *Lindley* 12. *Hooker* ed. 2. 265. ed. 3. 269.

This common and beautiful garden plant is frequent among the moist mountainous woods and thickets of the north of England, Wales, Scotland, and Ireland, where it flowers about June and July. Stems erect, 1 to 2 feet high. Leaves divided into 5 deep segments, variously cut and serrated. The flowers rarely expand sufficiently to show the stamens.

**GENUS CCXCVII. CALTHA.** *Marsh-Marigold.*

*Nat. Order.* **RANUNCULACEÆ.**

**GEN. CHAR.** *Calyx* 5-leaved, petaloid, deciduous. *Petals* wanting. *Follicles* 5 to 15, compressed, spreading, many-seeded.

Perennial plants with smooth leaves and yellow or white flowers; natives of marshy meadows and swamps in the northern hemisphere. About 10 species only are known.

**CALTHA PALUSTRIS.** *Common Marsh-Marigold.* TAB. 798. Stem erect. Leaves heart-shaped, rounded, crenated. Calyx leaves 5 or 6, oval.

*Caltha palustris*, *E. B.* 506. *Smith* III. 59. *Lindley* 12. *Hooker* ed. 2. 266. ed. 3. 269.

Few of our wild plants are more showy and ornamental than this, which grows upon almost every river-side and marshy spot throughout the kingdom. Stem about 18 inches high, with alternate, nearly sessile leaves. Lower leaves on long hollow footstalks, large, of a deep shining green. Flowers axillary, solitary, coming out in April and May; the calyx, stamens and pistils of a bright golden yellow. The young buds are pickled as a substitute for capers, which they resemble in form, and are perhaps an equally good one as the berries of *Euphorbia Lathyris*, which is cultivated in our gardens for a similar purpose; for both are highly acrid, and only rendered eatable by the acid pickle.

**CALTHA RADICANS.** *Creeping Marsh-Marigold.* TAB. 799. Stem reclining, creeping. Leaves triangular, somewhat heart-shaped, very sharply crenate.

*Caltha radicans*, *Forster.* *E. B.* 2175. *Smith* III. 60. *Lindley* 12. *C. palustris*  $\beta$ . *Hooker* ed. 2. 266. ed. 3. 269.

The reclining stem rooting at the joints, triangular leaves, and smaller flowers, distinguish this from the preceding, of which it is often regarded as a mere accidental variety. In mountainous districts in Scotland it is not uncommon, flowering in May and June.

## GENUS CCXCVIII. HELLEBORUS. *Hellebore.*

*Nat. Order.* RANUNCULACEÆ.

**GEN. CHAR.** *Calyx* 5-leaved, often petaloid, persistent. *Petals* 8 to 15, short, tubular, 2-lipped; nectariferous at the base. *Follicles* 3 to 10, coriaceous, erect, many-seeded. *Seeds* arranged in a double row, elliptical, umbilicated.

The genus, which is small, is eminently European, and consists of hardy perennial herbs, with divided, palmate, or pedatifid leaves, and white, dull purple, or greenish flowers. All of the species are violent drastic purgatives, and *H. niger*, *H. foetidus*, and *H. orientalis*, were once highly esteemed in medicine; the two former still have their places in our pharmacopœia as anthelmintics, but are rarely now prescribed, on account of their dangerous operation. *H. niger* and *H. foeti-*



*dus* are both common plants in our gardens, and prized on account of their early flowering; the former, a native of Austria, is the Christmas Rose of the florists, whose large white calyxes vie in brightness with the snow, above which they often peer, changing however to pink, and subsequently to green as the season advances.

HELLEBORUS VIRIDIS. *Green Hellebore.* TAB. 800.

Stem few-flowered, leafy. Leaves digitate, the lobes serrated towards the extremity. Calyx spreading.

*Helleborus viridis*, *E. B.* 200. *Smith* III. 57. *Lindley* 12. *Hooker* ed. 2. 266. ed. 3. 263.

Woods, thickets, and hedges in a chalky soil, not unfrequently present this species, but in other districts its occurrence is rare. The root-leaves come out early in the year on long petioles, and fade before the summer is over. The stem rises from 6 inches to a foot high, bearing a few large leaves resembling those of the root in form, but sessile towards the upper part, and a scanty number of largish green expanded flowers. Styles seldom more than 3 or 4. The herb and root are employed by rustic practitioners in the diseases of their cattle. Flowers about April and May.

HELLEBORUS FŒTIDUS. *Stinking Hellebore.* *Bear's-foot.* *Setter-wort.* TAB. 801.

Stem many-flowered, leafy. Leaves pedate. Calyx converging.

*Helleborus fœtidus*, *E. B.* 613. *Smith* III. 58. *Lindley* 13. *Hooker* ed. 2. 266. ed. 3. 264.

A handsome evergreen plant, more common than *H. viridis*, though still very partially distributed. It affects like that a chalky soil, and though more frequent on the borders of woods and thickets, springing rapidly from seed, it sometimes extends into more exposed places, and is found on hedge-banks, balks, and even open pastures. Stem 1 to 2 feet high, branched, round, smooth, as is the whole herb. Leaves spreading, of a very dark glossy green colour, pedate with lanceolate lobes, which are more or less serrated towards the tips. Inflorescence paniculate, terminating the branches in their second year, large and ornamental. Flowers pale yellowish green, the calyx always closed and tipped externally with purple: petals (nectaries) toothed in the margin, secreting abundance of honey: styles 3 to 5, seldom more numerous: hence in a British Flora the genus will be often referred to the preceding order. The whole herb is fœtid, acrid, and violently cathartic. Flowers from January to April. Few plants afford more beautiful illustration of the modern theory respecting the formation of the flower, the petioles gradually dilating the proportion of their breadth, tracing from the base of the inflorescence upwards, as the lamina becomes abortive, and assuming at length the appear-

ance of lanceolate bractææ, between the uppermost of which, and the broad concave leaves of the calyx, the transition must be evident to the least critical observer.

## CLASS XIV. DIDYNAMIA.

### ORDER I. GYMNOSPERMIA.

ALL of the plants of this order belong to the

*Nat. Order.* LABIATÆ.

They have square stems, opposite leaves, and irregular lipped flowers, disposed in sessile, opposite cymes, so as to be apparently whorled. The calyx is permanent and includes the 4-lobed germen, whose coats are so closely attached to the 4 seeds that these latter appear at first sight to be destitute of cover; hence the Linnæan title, *Gymnospermia*, literally, naked-seeded. The order, which under the natural arrangement, includes *Salvia*, *Lycopus*, and several exotic genera of the class *Diandria*, is one of the most uniform throughout the vegetable kingdom, the plants agreeing in properties as well as general structure: all contain more or less of a volatile oil secreted in minute glands, upon the leaves and other parts, conjoined with a bitter principle, which render them tonic, cordial, and stomachic: none are deleterious. The study of the genera is much facilitated by their association under the following tribes, an arrangement for which botany is indebted to Mr. Bentham.

### TRIBE I. MENTHOIDEÆ.

Tube of the *corolla* scarcely longer than the *calyx*; its limb 4- or 5-cleft, and nearly regular. *Stamens* distant.

#### GENUS CCXCIX. MENTHA. *Mint*.

GEN. CHAR. *Calyx* equal, 5-toothed; its mouth naked, rarely villous. *Corolla* nearly regular, 4-cleft, the broadest segment notched; tube very short. *Stamens* distant; exserted, or included. *Filaments* naked. *Anthers* with 2 parallel cells.

Aromatic perennials, flourishing in damp situations. Some species are met with in various parts of the world, but their



chief station seems to be in the northern hemisphere. Flowers various shades of purple or red, rarely white; generally very small, but densely clustered in whorl-like, or capitate cymes. Most of the Mints increase rapidly by their creeping surculi. The species are not yet accurately defined, several, at present, so considered, being probably varieties only.

**MENTHA SYLVESTRIS.** *Horse-Mint.* TAB. 802.

Leaves ovato-oblong, very acute, deeply serrated, downy beneath. Spikes almost cylindrical, scarcely interrupted. Bracteas awl-shaped. Calyx very hairy.

*Mentha sylvestris*, *E. B.* 686. *Smith* III. 73. *Lindley* 199. *Hooker* ed. 2. 272. ed. 3. 276.

Not unfrequent in moist waste ground and watery places, the stem rising from 2 to 4 feet high, and flowering in August and September. The whole plant, including the inflorescence, has in general a hoary or shaggy appearance, owing to its being clothed with soft white hairs, which upon the stem and flower-stalks are bent closely downwards. Corolla pale lilac, hairy. Stamens mostly included.

**MENTHA ROTUNDIFOLIA.** *Round-leaved Mint.* TAB. 803.

Leaves elliptical, obtuse, wrinkled, sharply serrated; shaggy beneath.

Spikes interrupted. Bracteas lanceolate. Calyx somewhat hairy. *Mentha rotundifolia*, *E. B.* 446. *Smith* III. 74. *Lindley* 199. *Hooker* ed. 2. 272. ed. 3. 276.

Occasionally found in moist waste ground, where it flowers in August and September. Stem 1 to 2 feet high, hairy. Leaves roundish, heart-shaped, hairy on both sides. Whorls of the spike rather distant below. Corolla reddish. Stamens always protruding.

**MENTHA VIRIDIS.** *Spear Mint.* TAB. 804.

Leaves lanceolate, acute, serrated, glabrous, sessile. Spikes interrupted. Bracteas bristle-shaped, somewhat hairy as well as the teeth of the calyx. Flower-stalks very smooth.

*Mentha viridis*, *E. B.* 3424. *Smith* III. 75. *Lindley* 199. *Hooker* ed. 2. 272. ed. 3. 276

Perhaps not indigenous, but long naturalized in marshy places in many parts of the kingdom, throughout which it is commonly cultivated for culinary purposes, its grateful aromatic and pungent flavour rendering it an agreeable condiment. The Green or Spear Mint is readily distinguished in all its variations from the other spiked species by the perfect smoothness and polish of its flower-stalks, and acute, sessile leaves. Spikes generally very long, taper, with distant whorls throughout. Bracteas very slender. Calyx glandular, the teeth only hairy. Corolla light reddish-purple, smooth. Flowers in August and September.

**MENTHA PIPERITA.** *Pepper Mint.* TAB. 805.

Leaves ovato-lanceolate, acute, deeply and sharply serrated, slightly

hairy ; petiolate. Spikes interrupted below. Bracteas lanceolate. Calyx very smooth at the base, glandular.

*Mentha piperita*, *E. B.* 687. *Smith* III. 76. *Lindley* 200. *Hooker ed.* 2. 273. *ed.* 3. 276.

This species, cultivated in large quantities for the sake of its essential oil, is found wild in watery places in several parts of the kingdom, though more frequently perhaps an outcast from gardens. Stem 1 to 3 feet high, a little hairy, often purplish. Leaves all on footstalks, dark green and smoothish above, more or less hairy, but never downy or shaggy beneath. Spike bluntish, interrupted at the base ; the lowest whorl, especially, remote. Calyx teeth fringed with hairs, purple. Corolla pale purple : the stamens shorter than its segments. Flowers in August and September.

**MENTHA CRISPA.** *Curled Mint.* TAB. 805\*.

Leaves cordate, rugose, crisped at the margin, with long pointed teeth, hairy, especially beneath ; subsessile. Whorls spiked, crowded ; the lower ones distinct. Pedicles rather smooth. Calyx slightly hairy.

*Mentha crispa*, *E. B. Supp.* 2785. *Linn. Sp. Pl.* 805. *M. aquatica crispa*, *Bentham*.

First noticed in this country as a distinct species by J. Mitchell, Esq., who discovered it growing upon the banks of the Wooler Water, near Haughhead, and on the side of a rivulet leading into the same water above Longly-ford, at the bottom of the highest mountain of the Cheviot range, Northumberland. Its affinities are doubtful : we have long known it as a garden plant, and regarded it as a variety of *M. viridis* or *M. piperita*, most probably of the latter, from which, excepting the peculiar habit communicated by the monstrosity of the foliage, it chiefly differs in having the calyx hairy throughout,—a character which long cultivation of the Mints induced us to regard of small importance. The corolla varies in colour in different soils from a pale dingy purple to a reddish hue. Flowers in August and September.

**MENTHA CITRATA.** *Bergamot Mint.* TAB. 806.

Leaves cordato-ovate, acute, strongly serrated, smooth on both sides, stalked. Whorls distant, capitate. Calyx and pedicles perfectly glabrous.

*Mentha odorata*, *Sole, E. B.* 1025. *Mentha citrata*, *Ehrhart. Smith* III. 78. *Lindley* 200. *Hooker ed.* 2. 273. *ed.* 3. 277.

Rare in a wild state, in ditches and watery places, having only been found hitherto in Cheshire, in North Wales, and near Bedford. In gardens it has long been cultivated for its fragrance under the name of Orange or Bergamot Mint. It has very much the habit of the normal form of the next species *M. hirsuta*, but is perfectly smooth in every part, and has a strong and fragrant scent like that of Bergamot, or *Monarda didyma*. The herb often assumes a purple hue, especially in situations exposed to the sun. Flowers in August and September.



MENTHA HIRSUTA. *Hairy Water Mint.* TAB. 807. & 808.

Leaves ovate, serrated, hairy; stalked. Flowers capitate, or whorled.

Calyx and pedicles hairy, the hairs of the latter reflexed.

$\alpha$ , *Mentha hirsuta*, *E. B.* 447. *Smith* III. 78. *Lindley* 200. *Hooker* ed. 2. 273. ed. 3. 277. Flowers capitate.

$\beta$ , *Mentha sativa*, *E. B.* 448. Flowers whorled.

A variable species, frequent on the banks of rivers, and in marshes. Flowers in August and September. Its aspect is so very different in the two states figured in this work, neither of which are uncommon, that it is not surprising they should have been regarded at first as distinct species; the occurrence indeed of intermediate varieties alone justifies their association by modern botanists.

MENTHA ACUTIFOLIA. *Fragrant Sharp-leaved Mint.* TAB. 809.

Leaves ovato-lanceolate, tapering at each end. Flowers whorled.

Calyx hairy all over. Hairs of the pedicles spreading.

*Mentha acutifolia*, *E. B.* 2415. *Smith* III. 81. *Lindley* 200. *Hooker* ed. 2. 273. ed. 3. 277.

A rare plant, first found on the banks of the Medway. Suspected by some botanists to be a mere variety of *M. hirsuta*. We have perhaps equal reason to refer it to *M. rubra*, which it resembles in scent and somewhat in habit, though differing in the pubescence of the calyx.

MENTHA RUBRA. *Tall Red Mint.* TAB. 810.

Stem upright, zigzag. Leaves ovate, sharply serrated, subglabrous; stalked. Flowers whorled. Flower-stalks, and lower part of the calyx quite smooth; its teeth hairy.

*Mentha rubra*, *E. B.* 1413. *Smith* III. 82. *Lindley* 200. *Hooker* ed. 2. 273. ed. 3. 277.

The tallest of our native species, rising often to the height of 5 or 6 feet. Not unfrequent on the banks of rivers, and in wet places under hedges; flowering about September. Stems generally red, wavy. Leaves ovate, dark glossy green; in dry situations hairy. Whorls numerous, distant. Flowers larger than in most of the genus, of a bright purplish red. Bracteas linear, fringed with hairs. The whole plant has a strong aromatic scent, which is increased by culture in a dry soil, and was formerly in repute for its cordial qualities; hence it is sometimes met with in old gardens under the name of Heart Mint, though whether in allusion to those qualities, or to distinguish it from the long-leaved or Spear Mint, is doubtful.

MENTHA GENTILIS. *Bushy Red Mint.* TAB. 811.

Stem much branched, spreading. Leaves ovate, hairy, subserrated; stalked. Flowers whorled. Flower-stalks and base of the calyx smooth.

*Mentha gentilis*, *E. B.* 2118. *Smith* III. 83. *Lindley* 200. *Hooker* ed. 2. 273. ed. 3. 277.

A native of watery places in several parts of England and Wales, and probably more common than usually considered. It approaches in some varieties to *M. rubra*, but the flowers are much smaller, the whorls less conspicuous, and, as observed by Dr. Hooker, not so much confined to the upper axils as in that species; the leaves too are less sharply serrated, though often more so than expressed in our figure, and are always hairy; while the low, bushy, spreading stems, contrast strongly with the erect habit of the preceding plant. Its agreeable scent, almost equal to that of *M. citrata*, the Bergamot Mint, has rendered it a favourite in the flower garden, where a variegated variety has usurped the name of Orange Mint, in allusion to the rich yellow stripes upon the leaves. Flowers in August and September.

MENTHA GRACILIS. *Narrow-leaved Red Mint.* TAB. 812.

Stem upright, much branched. Leaves ovato-lanceolate, acute, deeply serrated, subglabrous; nearly sessile. Flowers whorled.

Flower-stalks and base of the calyx quite smooth; its teeth hairy.

*Mentha gentilis*, *E. B.* 449. *M. gracilis*, *Smith* III. 84. *Lindley* 201. *Hooker ed.* 2. 274. *ed.* 3. 277.

Moist meadows and commons, watery places, and the margins of pools and rivers are its habitats. The stems grow in tufts about 18 inches high; their erect habit and the narrowness of the leaves chiefly distinguish this species from *M. gentilis*, under which name it was originally published in English Botany. Flowers in September. The scent is less agreeable than that of the last species.

MENTHA ARVENSIS. *Corn Mint.* TAB. 813.

Stem branched, diffuse. Leaves ovate, hairy, serrated. Flowers whorled. Calyx campanulate, clothed with spreading hairs.

*Mentha arvensis*, *E. B.* 2119. *Smith* III. 85. *Lindley* 201. *Hooker ed.* 2. 274. *ed.* 3. 277.

Frequent in corn-fields, especially on a sandy or gravelly soil, flowering from July to September. The short, open, campanulate calyx, covered all over with horizontally-spreading hairs, distinguishes this and the next species from all of the other British *Menthæ*. Flowers reddish-purple. The whole herb has a strong disagreeable scent, compared to that of decayed cheese. A very troublesome weed.

MENTHA AGRESTIS. *Rugged Field Mint.* TAB. 814.

Stem erect. Leaves somewhat heart-shaped, strongly serrated, rugose. Flowers whorled. Calyx campanulate, covered with long spreading hairs.

*Mentha agrestis*, *E. B.* 2120. *Smith* III. 87. *Lindley* 201. *Hooker ed.* 2. 274. *ed.* 3. 278.

Similar in its habitats to the last, though chiefly met with in the southern counties of England. The more erect growth, and broad wrinkled leaves distinguish it from *M. arvensis*, of which it may be, however, only a variety. Flowers in August and September.



MENTHA PULEGIUM. *Penny-royal.* TAB. 815.

Stems prostrate. Leaves ovate, downy, subcrenate. Flowers whorled.

Flower-stalks and calyx downy all over; teeth of the latter fringed. *Mentha Pulegium*, *E. B.* 1026. *Smith* III. 87. *Lindley* 201. *Hooker* ed. 2. 274. ed. 3. 278.

Long cultivated in gardens on account of its mild stimulant, medicinal qualities, the Penny-royal is occasionally found naturalized on wet commons and on the margins of brooks, flowering in August and September. It is the smallest we have of its genus, and is readily known by its prostrate stems, small, downy, recurved leaves, and numerous dense whorls of purple flowers. The smell is peculiarly pungent, and unlike that of any other native mint.

TRIBE II. SATUREINEÆ.

*Corolla* 2-lipped; the tube about as long as the calyx; its lips nearly equal in length: the upper one erect, somewhat flat. *Stamens* distant.

GENUS CCC. THYMUS. *Thyme.*

GEN. CHAR. *Calyx* 10-ribbed, tubular, the orifice closed with hairs; 2-lipped; the upper lip 3-toothed, the lower one bifid. *Corolla* with the upper lip erect, nearly plane, emarginate; the lower patent and trifid.

Small under-shrubs, or trailers with ligneous stems. They have all evergreen leaves, and with one or two exceptions, purple or reddish flowers, which are either whorled or capitate. Natives of the temperate and warmer countries of Europe, and of the northern coast of Africa. Our only indigenous species, *T. Serpyllum*, is found apparently wild in the United States, but is, we believe, the only known instance of the genus occurring in the western hemisphere, and it is probably not indigenous.

THYMUS SERPYLLUM. *Wild Thyme.* TAB. 816.

Stems branched, decumbent. Leaves flat, ovate, obtuse, entire; petiolate; more or less fringed with hairs at the base. Flowers capitate.

*Thymus Serpyllum*, *E. B.* 1514. *Smith* III. 107. *Lindley* 204. *Hooker* ed. 2. 274. ed. 3. 278.

Wild Thyme clothes with its purple blossoms many a heath and hillock in dry chalky and gravelly soils, flowering through the summer. Its entangled branches form an elastic turf, and the bruised leaves when trodden upon diffuse a warm aromatic odour. Bees are fond

of the flowers. The flavour of mutton is supposed to be improved by the sheep feeding on this plant. Stems filiform, decumbent and rooting. Leaves elliptical-ovate, sprinkled with resinous dots. Heads of flowers terminal. Seeds seldom perfected. Exceedingly variable in size, scent, and in the hairiness of the foliage in different soils and situations; but it is very doubtful whether any of the cultivated Thymes derived their origin from this, as commonly supposed.

### GENUS CCCI. ORIGANUM. *Marjoram.*

GEN. CHAR. *Spikes* of flowers 4-sided, with imbricated bractes; resembling a catkin. *Calyx* cylindrical, 5-toothed; closed up with hairs when in fruit. *Corolla* with the upper lip erect, nearly plane; lower one patent, trifold.

Herbs, or evergreen under-shrubs with pink or white flowers. Their chief station is in the eastern hemisphere to the north of the equator. Several are cultivated as pot-herbs.

ORIGANUM VULGARE. *Common or Wild Marjoram.* TAB. 817.

*Spikes* of flowers roundish, panicked, clustered, smooth. Bractes ovate, longer than the calyx. Leaves ovate, entire.

*Origanum vulgare*, *E. B.* 1143. *Smith* III. 106. *Lindley* 206. *Hooker ed.* 2. 275. *ed.* 3. 278.

Plentiful on dry hilly and bushy places, especially where the substratum is chalk or limestone, flowering in July and August. Stems about a foot high, hairy, of a reddish or purple hue. Leaves very entire, slightly pubescent, very conspicuously dotted with glands. Flowers rose-colour. Calyx and bractes purple. Whole herb powerfully fragrant and aromatic, warm and pungent to the taste. Bees delight in the flowers as in those of other odoriferous plants of the order. Perennial.

### TRIBE III. AJUGOIDEÆ.

Upper lip of the *Corolla* abbreviated or apparently wanting; lower one longer, patent. *Stamens* ascending, much exerted.

### GENUS CCCII. TEUCRIUM. *Germander.*

GEN. CHAR. *Calyx* tubular, 5-toothed, nearly equal or 2-lipped. *Corolla* with the tube shorter than the calyx; upper lip bipartite, the segments divaricated, the lower patent, 3-lobed, the middle lobe the largest. *Stamens* exerted between the fissure of the upper lip, cells of the anthers confluent, spreading.



Small shrubs, or herbs, belonging to various parts of the world, but more frequent in the northern hemisphere. Flowers various. Plants generally bitter. The British species were formerly valued for their medicinal qualities, but have long fallen into disuse.

**TEUCRIUM SCORODONIA.** *Wood Germander. Wood Sage.*  
**TAB. 818.**

Stem erect. Leaves cordate, crenated, downy; petiolate. Flowers in lateral and terminal one-sided racemes.

*Teucrium Scorodonia*, *E. B.* 1543. *Smith* III. 68. *Lindley* 198. *Hooker ed.* 2. 275. *ed.* 3. 278.

Abundant in woods and on bushy heaths, rising to the height of 1 or 2 feet, and flowering from July to September. Stems harsh and hairy. Leaves dark-green, heart-shaped, wrinkled, very regularly crenated. Flowers yellowish, with purple-red stamens. The whole plant is exceedingly bitter, and possesses tonic properties. It has a scent approaching to that of hops, and has been employed as a substitute for them in brewing: the flavour is good, but it communicates a very dark colour to the beer. Perennial.

**TEUCRIUM SCORDIUM.** *Water Germander.* **TAB. 819.**

Stem procumbent. Leaves oblong, downy, serrated; sessile. Flowers axillary, in pairs.

*Teucrium Scordium*, *E. B.* 828. *Smith* III. 68. *Lindley* 198. *Hooker ed.* 2. 275. *ed.* 3. 279.

Grows in wet meadows and marshes in the isle of Ely, about Cambridge, near Highbridge, Oxfordshire, and in Ireland; but, though plentiful in the first habitat, generally regarded as a rare plant. Leaves oblong, sharply and equally serrated throughout; whitish and downy beneath. Flowers pale purple or rose-colour, generally 2 together in each axil. As a remedy for pestilential and other diseases its reputation was once very high: the strong bitter flavour indicates a tonic quality, perhaps superior to that of the Wood Sage, but its value as a medicine has long been superseded by more powerful substitutes. Scent disagreeable, somewhat inclining to that of garlic. Perennial. Flowers from June to August.

**TEUCRIUM CHAMÆDRYS.** *Wall Germander.* **TAB. 820.**

Stems ascending, roundish. Leaves ovate, tapering into a foot-stalk, inciso-serrate. Flowers axillary, 3 together.

*Teucrium Chamædrys*, *E. B.* 680. *Smith* III. 69. *Lindley* 198. *Hooker ed.* 2. 275. *ed.* 3. 279.

Cultivated in our gardens for medicinal purposes, though like its congeners fallen into disuse, this pretty species of Germander is occasionally met with in a wild state on ruined walls and old castles in several parts of the kingdom, as at Norwich, Winchelsea, and Durham. Root perennial, sending out many creeping suckers. Stems

somewhat decumbent, very much branched and bushy. Leaves dark glossy green, very deeply and irregularly serrated or cut. Flowers purplish-red, generally 3 together in the axils of the upper leaves; they are larger and more showy than those of the last species, and the inflorescence being successive from June to the end of autumn, renders the plant worthy of a place in the dry flower garden, especially for decorating the sunny sides of ruins and artificial rock-work.

### GENUS CCCIII. AJUGA. *Bugle*.

GEN. CHAR. *Calyx* ovate, 5-cleft, nearly equal. *Corolla* with the tube exserted; the upper lip very short, erect, entire or emarginate; the lower one large, patent, trifold. *Stamens* ascending, protruding above the upper lip.

Hardy perennial or annual herbs with blue, purple, or white, rarely yellow flowers. Some of the species are ornamental, but they are neither valued in cultivation, nor applied to any economical purpose.

#### AJUGA REPTANS. *Common Bugle*. TAB. 821.

Herb nearly smooth. Stem solitary, with creeping scions. Lower lip of the corolla 4-cleft.

*Ajuga reptans*, *E. B.* 489. *Smith* III. 65. *Lindley* 198. *Hooker* ed. 2. 275. ed. 3. 279.

A very common plant in moist woods and pastures, flowering in May. Root perennial. Flower stems erect, about a foot high, throwing out from their bases many creeping scions, which strike root at intervals and appear to be the principal source of multiplication in this species, the seeds, in some situations at least, being sparingly matured. Leaves broadly ovate, crenated, the lower ones tapering into a footstalk. Flowers light-blue, flesh-coloured, or white; the whorls often thickly set, and forming a leafy pyramidal mass of inflorescence not unlike that of the next species. The herb is somewhat astringent, and was once in repute as a vulnerary.

#### AJUGA PYRAMIDALIS. *Pyramidal Bugle*. TAB. 822.

Hairy. Scions none. Radical leaves very large, obovate, crenate, obtuse. Whorls crowded into a pyramidal form.

*Ajuga pyramidalis*, *E. B.* 1270. *Smith* III. 66. *Lindley* 198. *Hooker* ed. 2. 276. ed. 3. 279.

An alpine species met with in mountain pastures in several parts of the Highlands of Scotland, but still regarded as rare. Root perennial, fibrous. Stem 2 to 6 inches high. Radical leaves very large, numerous, obovate and bluntly crenated, often reddish or purple as well as the bracteas. Whorls very much crowded. Corolla blueish-purple, variegated with darker streaks and a yellow palate. Whole plant more or less hairy. Flowers in June.



AJUGA ALPINA. *Alpine Bugle*. TAB. 823.

Scions none. Leaves nearly smooth, irregularly toothed; the uppermost bractees entire. Whorls rather distant.

*Ajuga alpina*, *E. B.* 477. *Smith* III. 65. *Lindley* 198. *Hooker* ed. 2. 276. ed. 3. 279. *A. genevensis*, *With. Benth. Macreight Man. Brit. Bot.* 187.

Rare, on the mountains of Wales, the north of England and Scotland. A perennial species, nearly resembling at first sight loose flowering specimens of *A. reptans*, from which, however, though by some botanists regarded as a variety, it seems well distinguished by the absence of scions, and by the irregularly notched leaves. Flowers pale blue, or flesh-coloured, with deeper striæ. Swiss specimens of *A. genevensis* are much more hairy, and the leaves in general more regularly crenated than in the British plant, which, however, it must be acknowledged is exceedingly variable in these particulars, as well as in the distance of the whorls. Flowers in June and July.

AJUGA CHAMÆPITYS. *Ground Pine*. *Yellow Bugle*. TAB. 824.

Hairy. Stem diffuse, branched. Leaves deeply divided into 3 linear, entire segments. Flowers sessile, solitary, shorter than the leaves.

*Ajuga Chamæpitys*, *E. B.* 77. *Smith* III. 67. *Lindley* 198. *Hooker* ed. 2. 276. ed. 3. 279. *Teucrium Chamæpitys*, *Linn.*

Chalky and gravelly fields in the south-eastern counties of England often produce this plant abundantly, but it is rare in other parts of the kingdom. So different in habit from the preceding species that its affinity would scarcely be recognized without examination of the flower. The whole herb is hairy, viscid to the touch, and has a bitter aromatic flavour. Corolla yellow, sprinkled with red dots. The English name, Ground Pine, alludes to its resemblance to a young Fir-tree, the slender segments of the upper leaves, which are closely tiled towards the apex of the branches so as nearly to conceal the flowers, giving it that appearance to the superficial observer. Annual. Flowers in April and May.

## TRIBE IV. NEPETEÆ.

*Corolla* 2-lipped. *Stamens* ascending, shorter than the upper lip.

\* *Calyx* equal or oblique, 5- or 10-toothed, not 2-lipped.

GENUS CCCIV. BALLOTA. *Fetid Horehound*.

GEN. CHAR. *Calyx* nearly salver-shaped, equal, with 10 ribs, and 5 broad, mucronate teeth, naked within. Upper lip of the corolla erect, concave, emarginate; the lower one 3-

lobed, the middle lobe largest and notched. Cells of the anthers spreading.

A small genus of uninteresting weeds belonging to Europe and the temperate parts of Asia. They are perennial herbs with purple or blueish flowers, occasionally varying to white; and a pungent disagreeable odour.

**BALLOTA NIGRA.** *Black Fetid Horehound.* TAB. 825.

Leaves ovate, deeply serrated. Calyx-teeth abruptly acuminate, patent, longer than the tube of the corolla.

*Ballota nigra*, *E. B.* 46. *Smith* III. 101. *Lindley* 201. *Hooker ed.* 2. 276. *ed.* 3. 280.

Abundant in hedges and waste ground, especially near towns and villages, growing to the height of 2 or 3 feet, and flowering in July and August. It is an unsightly plant with a heavy offensive scent, which is most powerful in hot weather. Corolla reddish purple, sometimes white, in which case the plant has been described as a distinct species, *B. alba* of Linnæus; but the differential characters assigned to it, viz., the more taper and erect teeth of the calyx, and the longer tube of the corolla, are variations not unfrequently met with in the ordinary species with purple flowers.

GENUS CCCV. **LEONURUS.** *Motherwort.*

GEN. CHAR. *Calyx* equal, 5- or 10-ribbed, with 5 subulate teeth; orifice naked. *Corolla* scarcely longer than the calyx; the upper lip villous above, concave, entire; the lower one patent, 3-parted. *Anthers* sprinkled with shining dots.

Plants herbaceous, biennial, or perennial. Flowers various. Natives of the temperate and colder regions of Europe and Asia.

**LEONURUS CARDIACA.** *Common Motherwort.* TAB. 826.

Leaves tapering into a petiole; lower ones lanceolate, 3-lobed, upper ones entire.

*Leonurus Cardiaa*, *E. B.* 286. *Smith* III. 104. *Lindley* 199. *Hooker ed.* 2. 276. *ed.* 3. 280.

Found occasionally on hedge-banks, balks, and waste spots on gravelly or calcareous soil. An elegant plant with erect stems from 1 to 3 feet high; often branched. Lower leaves cuneato-lanceolate, with mostly 3 acute lobes; upper ones linear-lanceolate, entire. Whorls of flowers numerous, rather crowded. Calyx with 5 sharp spreading teeth. Corolla white with a tinge of pink, the lower lip purple, the upper one shaggy with hairs outside. Whole herb pubescent. Perennial. Flowers in July and August. It has



a pungent odour and bitter taste, possesses slight tonic and stimulant properties, and is in high repute in Russia as an antidote to hydrophobia.

GENUS CCCVI. GALEOBDOLON. *Yellow Archangel.*  
*Weasel-snout.*

GEN. CHAR. *Calyx* campanulate, 5-toothed; the teeth spreading, nearly equal, acute, bristle-pointed. *Corolla* longer than the calyx; the upper lip incurved, arched, entire; the lower one smaller, with 3 nearly equal, acute lobes.

*G. luteum*, probably the only plant of the genus, was referred by Linnæus to *Galeopsis*, from which, however, as well as from *Lamium*, it appears sufficiently distinct to maintain its present position.

GALEOBDOLON LUTEUM. *Yellow Archangel. Yellow Weasel-snout.* TAB. 827.

*Galeobdolon luteum*, *E. B.* 787. *Smith* III. 96. *Lindley* 202. *Hooker ed.* 2. 277. *ed.* 3. 280. *Galeopsis Galeobdolon*, *Linn.* *Lamium luteum*, *Ray.* *Lamium Galeobdolon*, *Crantz.* *Macreight Man. Brit. Bot.* 184.

Frequent in moist woods, thickets, and shady lanes in most parts of the kingdom. The flowering stems grow erect from 1 to 2 feet high; the barren ones lie along the ground, rooting at the nodes as they extend. Leaves ovato-acuminate, petiolate, deeply serrated; of a bright green colour. Flowers whorled, large and handsome. Corolla yellow; the lower lip variegated with deep orange and crimson specks; the upper lip downy on the outside. The whole plant is rather rough with hairs; its habit and structure accord very nearly with that of the genus *Lamium*, the triple, almost uniform segments of the lower lip constituting the chief character of distinction. Perennial. Flowers in May and June. It is deserving of a place in the flower-garden.

GENUS CCCVII. GALEOPSIS. *Hemp-Nettle.*

GEN. CHAR. *Calyx* campanulate, equal, 5-toothed; teeth mucronate. *Corolla* with the tube exerted, the throat dilated; upper lip vaulted, crenated; lower one with 3 spreading lobes, the middle lobe largest, obcordate; palate with 2 teeth in the sinuses of the lobes.

Annual herbs, chiefly European. Most of them are troublesome weeds on dry soils, but their flowers are sometimes ornamental, those of *G. versicolor* especially, which is the handsomest plant of the genus.

GALEOPSIS LADANUM. *Red Hemp-Nettle.* TAB. 828.

Stem not swollen beneath the nodes. Leaves lanceolate, more or less serrated, hairy. Upper lip of the corolla slightly notched.

Galeopsis Ladanum, *E. B.* 884. *Smith* III. 93. *Lindley* 204. *Hooker* ed. 2. 277. ed. 3. 280.

Frequent in England on dry arable land, especially over chalk and limestone. Rare in Scotland. Stem 6 inches to a foot high, with opposite branches, equal throughout, often red. Leaves oval-lanceolate, petiolate, hairy. Calyx hairy, often viscid, with pungent teeth. Corolla purplish rose-colour, hairy. Flowers from August to October.

GALEOPSIS VILLOSA. *Downy Hemp-Nettle.* TAB. 829.

Stem not swollen beneath the nodes. Leaves ovato-lanceolate, serrated, very soft and downy. Upper lip of the corolla deeply notched.

Galeopsis villosa, *E. B.* 2353. *Smith* III. 94. *Lindley* 204. *Hooker* ed. 2. 277. ed. 3. 280.

A native of sandy corn-fields, chiefly in the northern and midland counties of England. In habit it somewhat resembles the preceding, but is considerably taller and larger in all its parts. Leaves rather ovate than lanceolate, regularly serrated, petiolate; clothed with a dense soft down, especially beneath. Corolla large, pale sulphur-colour, with a deep yellow tinge on the lower lip; upper lip very sharply notched, and cloven. Flowers in July and August.

GALEOPSIS TETRAHIT. *Common Hemp-Nettle.* TAB. 830.

Stem hispid, swollen below the nodes. Leaves ovate, hairy, serrated.

Corolla twice as long as the calyx; upper lip nearly straight.

Galeopsis Tetrahit, *E. B.* 207. *Smith* III. 94. *Lindley* 204. *Hooker* ed. 2. 277. ed. 3. 280.

A troublesome weed in cultivated ground where the soil is gravelly. Stem 1 to 3 feet high, equal in the upper part, but always very much swollen beneath two or three of the lower joints. The whole plant is rough with rigid bristles, and has a strong disagreeable odour when bruised. It is a variable plant as to size and habit: the colour of the corolla is in general a palish purple, sometimes varying to white, but the lower lip is always marked with dark streaks and dots. Flowers in August.

GALEOPSIS VERSICOLOR. *Large-flowered Hemp-Nettle. Bee-Nettle.* TAB. 831.

Stem hispid, swollen beneath the nodes. Leaves ovate, hairy, serrated. Corolla 3 times as long as the calyx; upper lip tumid; middle lobe of the lower cordate.

Galeopsis versicolor, *E. B.* 667. *Smith* III. 95. *Lindley* 204. *Hooker* ed. 2. 277. ed. 3. 281. *G. Tetrahit*,  $\beta$ , *Linn.*—*grandiflora*, *Bentham*. *Macreight Man. Brit. Bot.* 185.



Not unfrequent in corn-fields on a sandy soil in Norfolk, the north of England, and Scotland; growing to the height of 2 or 3 feet, and flowering from June to August. Undoubtedly a distinct species from *G. Tetrahit*, though like many other annual plants liable to occasional variations in habit, which render the difference less obvious than expressed in our figures. A very beautiful plant, with large and showy flowers. Corolla yellow; the upper lip always arched or inflated; the lower one with its middle lobe emarginate, of a deeper hue, striated with purple or crimson, and always with a broad purple spot.

GENUS CCCVIII. LAMIUM. *Dead-Nettle.*

GEN. CHAR. *Calyx* 5-cleft, 10-ribbed; its teeth awl-shaped, nearly equal, spreading. Upper lip of the *corolla* erect, vaulted, entire: the lower one 3-lobed; the 2 lateral lobes very small, tooth-like; the middle one large, spreading, emarginate: throat inflated.

Annual, or perennial herbs, with rough, mostly cordate leaves, and white, purple, or red flowers. The several species are among the most common of European weeds; they have a heavy unpleasant odour, are disliked generally by cattle, and are not applied to any economical purpose. Bees, however, delight in their flowers, which secrete honey in abundance. They are seldom seen in cultivation, though some of the species, *L. Orvola* especially, are very ornamental.

LAMIUM ALBUM. *White Dead-Nettle. White Archangel.* TAB. 832.

Leaves heart-shaped, pointed, deeply serrated; petiolate. Flowers about 20 in a whorl. Calyx-tube shorter than the teeth. Upper lip of the corolla notched; lateral teeth of the lower lanceolate.

*Lamium album*, *E.B.* 768. *Smith* III. 90. *Lindley* 203. *Hooker* ed. 2. 277. ed. 3. 281.

Common every where in waste ground, by road-sides, and on the borders of fields, flowering abundantly through the summer and autumn. Perennial. Stems 12 to 18 inches high. Flowers large, white, or cream-coloured, sometimes tinged with blush: anthers black. A beautiful plant, which were it less frequent would be highly prized, though in its abundance regarded only as a troublesome weed.

LAMIUM MACULATUM. *Spotted Dead-Nettle.* TAB. 833.

Leaves heart-shaped, pointed, deeply serrated; petiolate. Flowers 8 or 10 in a whorl. Calyx-tube curved, as long as the teeth. Upper lip of the corolla crenated; lateral teeth of the lower bristle-shaped.

*Lamium maculatum*, *E.B.* 2550. *Smith* III. 90. *Lindley* 203. *Hooker* ed. 2. 277. ed. 3. 281.

Rare, on sheltered banks, as at Redland Court near Bristol, and Bayswater by London. Mr G. Don has met with it in Scotland. It is unquestionably a wanderer from the garden of the botanist, having been originally introduced from the south of Europe, where it occupies generally, according to Sir J. E. Smith, the place that *L. album* does with us. Perennial. Flowers through the summer and autumn. About a foot high. Corolla large, handsome, bright reddish purple, with deeper spots on the lower lip. The leaves are remarkably characterized by having a large white spot running along the middle of the upper surface, whence the specific name: this is a feature, however, that, as occurs in variegated plants generally, is wanting during the summer months, and is seldom met with at any period upon the leaves of the flowering stems in *L. maculatum*, hence not expressed in our figure.

**LAMIUM PURPUREUM.** *Red Dead-Nettle.* TAB. 834.

Stem leafless in the middle. Leaves rather bluntly heart-shaped, unequally crenated; petiolate: the uppermost crowded. Tube of the corolla bearded within (near the base).

*Lamium purpureum*, *E.B.* 769. *Smith* III. 91. *Lindley* 203. *Hooker* ed. 2. 278. ed. 3. 281.

Abundant on hedge-banks, borders of fields, &c., and one of the most troublesome weeds in cultivated ground, where it may be found in flower nearly throughout the year. Stem 6 or 8 inches high, branched below, naked in the middle, bearing its leaves and flowers crowded together at the apex. Leaves clothed with silky hairs, the upper ones purplish. Flowers purple of various shades, rarely white. Annual.

**LAMIUM INCISUM.** *Cut-leaved Dead-Nettle.* TAB. 835.

Stem leafless in the middle. Leaves broadly cordate, irregularly cut and serrated; petiolate; the uppermost crowded. Tube of the corolla naked within.

*Lamium incisum*, *E.B.* 1933. *Smith* III. 91. *Lindley* 203. *Hooker* ed. 2. 278. ed. 3. 281. *L. dissectum*, *Withering*.

Far less common than *L. purpureum*, but not unfrequent both on waste and cultivated ground in many parts of the kingdom, and intermediate in habit between that and the following species. Corolla purplish-red. Annual. Flowers in May and June.

**LAMIUM AMPLEXICAULE.** *Henbit Dead-Nettle.* TAB. 836.

Leaves broadly cordate, very obtuse, deeply inciso-crenate; petiolate: the floral ones partly lobed, sessile; stem-clasping. Calyx-teeth linear, as long as the tube.

*Lamium amplexicaule*, *E. B.* 770. *Smith* III. 92. *Lindley* 203. *Hooker* ed. 2. 278. ed. 3. 282.



The least frequent of our three annual species of *Lamium*, flourishing generally in dry sandy soils only, where, impatient both of shade and moisture, it prefers the way-side and open sunny field or garden, to the more sheltered situation. Habit that of *L. incisum*, but the whorls are more distant, and the floral leaves broader and more deeply lobed. Corolla pale rose-colour; the lower lip spotted with crimson, the upper deep red and hairy on the outside; tube very long and slender. Flowers from February to June.

GENUS CCCIX. BETONICA. *Betony*.

GEN. CHAR. *Calyx* ovate, with 5 nearly equal, awned teeth. *Corolla* with the upper lip ascending, flattish; the lower patent, trifold, the middle lobe entire or nearly so; tube cylindrical, exserted.

A small genus of perennial herbs, chiefly natives of Europe and the northern parts of Asia. They have purple or reddish flowers and neatly crenated leaves, rendering several of the species deserving of a place in the flower-garden, where however, in consequence of their resemblance in habit to *Lamium* and other common weeds, they are but rarely introduced. Very nearly allied to the following genus, *Stachys*, from which it is chiefly distinguished by the greater length of the tube of the corolla.

BETONICA OFFICINALIS. *Wood Betony*. TAB. 837.

Radical leaves ovato-cordate, crenated, petiolate. Spike interrupted.

Middle segment of the lower lip of the corolla notched.

*Betonica officinalis*, *E. B.* 1142. *Smith* III. 97. *Lindley* 202.

*Hooker* ed. 2. 278. ed. 3. 282. *Stachys Betonica*, *Benth.* *Macreight Man. Brit. Bot.* 185.

A frequent plant in woods and thickets, flowering in July and August. The stem is simple, 1 to 2 feet high, bearing 1 or 2 distant pairs of oblong, crenated, nearly sessile leaves. Radical leaves oval-heart-shaped, on long petioles, very deeply and regularly notched. Spike terminal, formed of several whorls of purplish rose-coloured flowers, the lowest whorl generally rather remote from the rest. Whole herb rough with rigid hairs, to whose mechanical action, the powdered leaves owe their use as a sternutatory. “*Sell your coat and buy betony*,” “*May you have as many virtues as betony*,” proverbs once in common application, indicate the estimation in which this plant was formerly held in medicine, though now regarded as nearly useless. Some of the older writers ascribe to it a narcotic effect, and the root

is said to be emetic and purgative. The leaves either fresh or dried are one of the many substitutes that have been from time to time recommended for tea, but the infusion curdles milk.

GENUS CCCX. STACHYS. *Woundwort.*

GEN. CHAR. *Calyx* sub-campanulate, 10-ribbed, with 5 nearly equal acuminate teeth. *Corolla* with the tube about the length of the calyx; the upper lip vaulted; the lower 3-lobed, the sides reflexed, the middle segment notched. *Stamens* after shedding their pollen divaricated.

Herbs or under-shrubs distributed over most parts of the world. About 60 species are known, some of which are ornamental, but a large proportion are mere weeds. Their odour is in general strong and disagreeable, but is not the herald of any available properties, though certain species were once held in repute as vulneraries, whence the English name "Woundwort." Flowers of various hues, mostly purple.

STACHYS SYLVATICA. *Hedge Woundwort.* TAB. 838.

Stem solid. Leaves ovato cordate, acute, petiolate. Flowers 6 in a whorl.

*Stachys sylvatica.* E. B. 416. *Smith* III. 98. *Lindley* 202. *Hooker* ed. 2. 278. ed. 3. 282.

Frequent under hedges and in moist shady places, growing to the height of 2 or 3 feet, and flowering in July and August. Herb rough with hairs. Leaves heart-shaped, attenuated from the middle, strongly serrated, of a deep dull green. Inflorescence terminal, consisting of numerous 6-flowered whorls. Corolla deep purple, variegated on the lower lip with darker spots and streaks intermixed with white. Perennial.

STACHYS AMBIGUA. *Ambiguous Woundwort.* TAB. 839.

Stem hollow. Leaves oblong, cordate at the base, petiolate. Flowers 6 in a whorl.

*Stachys ambigua,* E. B. 2089. *Smith* III. 99. *Lindley* 202. *Hooker* ed. 2. 278, ed. 3. 282. *S. palustris*,  $\beta$ , *hybrida*, *Benth.* *Macreight Man. Brit. Bot.* 185.

This plant, by some regarded as a variety either of the preceding or following species, abounds in fields and waste places in the Orkneys and West Highlands of Scotland, but is only occasionally met with in England. The less attenuated leaves and fistular stem distin-



guish it from *S. sylvatica*; the presence of a petiole from *S. palustris*. Pubescence silky. Corolla reddish-purple. Perennial. Flowers in August and September.

**STACHYS PALUSTRIS.** *Marsh Woundwort.* TAB. 840.

Root tuberous. Leaves linear-lanceolate, half embracing the stem. Flowers (mostly) 6 in a whorl.

*Stachys palustris*, *E. B.* 1675. *Smith* III. 99. *Lindley* 202. *Hooker* ed. 2. 279. ed. 3. 282.

Frequent in moist or watery places, especially about the banks of rivers. Root fleshy, more stoloniferous than in either of the preceding. Stems 2 or 3 feet high, bristly. Leaves linear-lanceolate, serrated; silky above, rather woolly beneath; generally sessile and stem-clasping. Corolla purple, the lower lip variegated with white and a few dark streaks. Perennial. Flowers in August. The herb has a very strong unpleasant odour, and ranked high in the old herbals as a vulnerary. Gerarde especially extols its virtues in healing "grievous and mortal wounds," the knowledge of which he derived from a clown, who cured a wound with it in a week, that "would have required 40 daies with balsam itself." Hence he named the plant Clown's Woundwort.

**STACHYS GERMANICA.** *Downy Woundwort.* TAB. 841.

Stem erect, woolly. Leaves oblong, ovate, crenate; densely silky above, woolly beneath. Whorls many-flowered.

*Stachys germanica*, *E. B.* 829. *Smith* III. 100. *Lindley* 202. *Hooker* ed. 2. 279. ed. 3. 282.

Grows in fields and on waysides where the subsoil is chalk or limestone, but chiefly in the midland counties of England. Remarkable among our native species for the dense silky or woolly covering of the stem and leaves. Corolla purple, downy on the outside. Perennial. Flowers in August and September. Occasionally introduced to the flower-garden, where, however, it must not be confounded with the more commonly cultivated *S. lanata*.

**STACHYS ARVENSIS.** *Corn Woundwort.* TAB. 842.

Stem weak. Leaves cordate, obtuse, crenate, slightly hairy. Whorls of 6 flowers. Corolla scarcely longer than the calyx.

*Stachys arvensis*, *E. B.* 1154. *Smith* III. 100. *Lindley* 202. *Hooker* ed. 2. 279. ed. 3. 283.

A very common weed in dry corn-fields and gardens, especially on a chalky or sandy soil. Root annual. Stem branched, spreading, weak, often procumbent; slightly hairy as well as the obtuse ovate or cordate leaves. Flowers small, the dull purple corolla scarcely extending beyond the calyx: they come out in July and August.

**STACHYS ANNUA.** *Pale annual Woundwort.* TAB. 842\*.

Downy. Stem erect. Leaves oblongo-lanceolate, rather acute, crenato-serrate, 3-nerved; the lower ones petiolate. Whorls about

6-flowered, spicate. Calyx hairy, its segments subulate. Seeds roundish, glossy.

*Stachys annua*, *E. B. Supp.* 2669. *Hooker ed. 2* 279. *ed. 3.* 283.

Discovered in August 1830, by Joseph Woods Esq., in a corn-field between Gad's Hill and Rochester. Stem about a foot high, branched. Flowers pale sulphur-yellow, fragrant. Probably introduced from the continent with the seed of the white wheat among which it was growing when discovered.

### GENUS CCCXI. NEPETA. *Cat-Mint.*

GEN. CHAR. *Calyx* cylindrical, many (13-15) ribbed; its orifice naked, 5-toothed. *Corolla* with the tube exerted; its orifice dilated: upper lip emarginate; lower 3-lobed, the lateral lobes very short, reflexed; the middle one broad, concave, crenate.

Herbs of the eastern hemisphere, chiefly perennial. Flowers various. They are highly aromatic and possess considerable stimulant and stomachic properties.

NEPETA CATARIA. *Common Cat-Mint.* TAB. 843.

Leaves downy, cordate, dentato-serrate, petiolate. Whorls pedunculated, crowded into a spike.

*Nepeta cataria*, *E. B.* 137. *Smith III.* 70. *Lindley* 203. *Hooker ed. 2.* 279. *ed. 3.* 283.

Found about hedges and waste places, in a chalky or gravelly soil, but far from being a common plant. Stems 2 or 3 feet high. Whole herb invested with a soft, short, velvet-like down. Corolla whitish, tinged with rose-colour and sprinkled with deeper dots. Anthers red. Flowers in July and August. Perennial. Every part of the plant exhales, when bruised, a pungent aromatic odour, somewhat resembling that of *Mentha Pulegium*. Cats delight as much in this scent as in that of *Valerian*, hence the English name.

### GENUS CCCXII. GLECHOMA. *Ground-Ivy.*

GEN. CHAR. *Calyx* cylindrical, many (13-15) ribbed, 5-toothed. *Corolla* twice as long as the calyx: upper lip trifid; lower one trilobate, the middle lobe emarginate, plane. Anthers approaching each other in pairs and forming a cross.

A small genus of perennial, creeping herbs, nearly allied to *Nepeta* in the structure of the flower. Natives of the northern hemisphere.



GLECHOMA HEDERACEA. *Ground-Ivy.* TAB. 844.

Leaves reniform, crenate.

*Glechoma hederacea*, *E. B.* 853. *Smith* III. 88. *Lindley* 199.  
*Hooker* ed. 2. 279. ed. 3. 283. *Nepeta Glechoma*, *Benth. Macreight Man. Brit. Bot.* 183.

*Ground-Ivy*, *Gill*, or *Alehoof*, is a very common plant in dry groves, and about hedge-banks, and shady waste places, flowering in April and May, and, in mild weather and sheltered situations, throughout the year. Stems procumbent and rooting. Leaves petiolate, rather downy, kidney or heart-shaped, and very regularly crenated. Flowers large, 3 together in the axils of the opposite leaves, but scarcely whorled. Corolla bright blue, sometimes rose-colour, or white. Long prized in domestic medicine, either steeped in ale, or the infusion taken as a substitute for tea, in scorbutic and pectoral diseases, and probably serviceable as a mild stimulant to the digestive organs.

GENUS CCCXIII. MARRUBIUM. *White Horehound.*

GEN. CHAR. *Calyx* cylindrical, with 10 ribs, and 5 or 10 spreading teeth; the orifice hairy. *Corolla* a little longer than the calyx: the upper lip straight, narrow, bifid; the lower one 3-lobed, the middle lobe largest and emarginate. *Stamens* included within the tube of the corolla.

Perennial herbs, or under-shrubs with white or purple flowers and hoary leaves. The genus seems chiefly confined to the temperate parts of Europe and Asia.

MARRUBIUM VULGARE. *Common White Horehound.* TAB. 845.

Stem erect, Leaves roundish-ovate, irregularly toothed, wrinkled. Calyx-teeth 10, bristle-shaped, hooked backwards.

*Marrubium vulgare*, *E. B.* 410. *Smith* III. 103. *Lindley* 201.  
*Hooker* ed. 2. 280. ed. 3. 283.

Not unfrequent in dry soils and situations, and on rubbish by roadsides, where it flowers about August and September. Stems 1 or 2 feet high, hoary as well as the leaves with a white, thick wool. Flowers small, yellowish-white. A bitter aromatic, time out of mind a popular remedy for coughs and asthmas.

\*\* *Calyx* 2-lipped.

GENUS CCCXIV. ACINOS. *Basil Thyme.*

GEN. CHAR. Whorls few-flowered. *Calyx* 13-nerved, tubular, gibbous at the base upon the lower side; upper lip

3-toothed, lower 2-cleft; throat hairy. *Corolla* with the upper lip nearly plane; the lower 3-lobed, the middle lobe scarcely emarginate.

A small series of European annual or biennial herbs, or under shrubs, with purple flowers. Plants more or less aromatic. Nearly allied to *Thymus* in the structure of the flower, and by some still assigned to that genus, between which and *Melissa* they undoubtedly occupy a station. We would willingly have left our single native species with the former, but deem it safer in the present uncertainty of synonyms to allow it to assume its typical importance as above.

ACINOS VULGARIS. *Common Basil Thyme*. TAB. 846.

Stem ascending, branched. Leaves oblong, acute, serrated; subpetiolate. Peduncles simple, about 6 in a whorl.

*Thymus Acinos*, Linn. E. B. 411. Smith III. 109. Lindley 205.

*Acinos vulgaris*, Hooker ed. 2. 280. ed. 3. 283. *Melissa Acinos*, Bent. *Macreight Man. Brit. Bot.* 182

Grow in hilly cultivated fields upon a chalky or gravelly soil, chiefly in the middle and southern counties of England: in Scotland it is rare. Stem branched, spreading, 6 or 8 inches long; the flowering branches erect. Leaves shortly petiolate, more or less deeply notched or serrated, ciliated with hairs, especially toward the base; sometimes nearly entire. Flowers blueish purple, each on a simple peduncle. Calyx swelling at the base on the under side, deeply furrowed, the prominent ribs fringed with bristly hairs: orifice closed with hairs when in fruit. Lower lip of the corolla in 3 blunt segments; the middle one obcordate, with a white spot at the base and 1 or 2 dark purple specks. Slightly fragrant. Flowers in August. Annual.

## GENUS CCCXV. CALAMINTHA. *Calamint*.

GEN. CHAR. Flowers axillary, mostly in loose lateral cymes.

*Calyx* 13-nerved, tubular, nearly equal at the base; upper lip 3-toothed, lower one bifid; throat hairy. *Corolla* with the upper lip nearly plane, emarginate; lower one trifid, the middle segment emarginate.

Perennial aromatic herbs and under-shrubs of the northern hemisphere. Similarly circumstanced to those of the last genus, these plants have been alternately referred to *Melissa* and *Thymus*.

CALAMINTHA OFFICINALIS. *Common Calamint*. TAB. 847.

Leaves with shallow serratures. Cymes pedunculate, forked, many-flowered. Hairs in the throat of the calyx not prominent.



*Thymus Calamintha*, *E. B.* 1676. *Smith* III. 109. *Lindley* 205.

*Calamintha officinalis*, *Hooker ed.* 2. 280. *ed.* 3. 284. *Melissa*

*Calamintha*, *Linnæus*, *Benth. Macreight Man. Brit. Bot.* 182.

Borders of fields, way-sides, and hedge-banks in a gravelly soil occasionally present this species; a bushy perennial herb with erect stems, pale purple flowers, and a peculiar aromatic scent and flavour. Upper lip of the corolla slightly concave, with reflexed margins. Throat of the calyx lined with white hairs, which, however, do not close it up when in fruit as they do in the following species, *C. Nepeta*. Flowers from July to September. Not unfrequently cultivated in gardens, its infusion sharing repute in domestic medicine with the teas of Sage, Balm, and other plants of the order, as a mild stomachic and febrifuge.

CALAMINTHA NEPETA. *Lesser Calamint.* TAB. 848.

Leaves serrated. Cymes pedunculate, forked, many-flowered, longer than the floral leaves. Hairs in the throat of the calyx prominent when in fruit.

*Thymus Nepeta*, *E. B.* 1414. *Smith* III. 110. *Lindley* 205. *Calamintha Nepeta*, *Hooker ed.* 2. 280. *ed.* 3. 284. *Melissa Nepeta*,

*Linnæus*, *Benth. Macreight Man. Brit. Bot.* 182.

A native of dry calcareous hills and banks, about villages and roadsides. More frequent and abundant than the last species, from which it is chiefly distinguished by the comparative smallness of its leaves and flowers, and by the strong prominent hairs which close the mouth of the calyx when in fruit. Perhaps a mere variety of *C. officinalis*, and applied to the same purposes; but its aroma is less agreeable. Corolla purple. Flowers in August and September.

## GENUS CCCXVI. CLINOPODIUM. *Basil.*

GEN. CHAR. Whorls many-flowered, with numerous linear bracteas forming a sort of involucre. *Calyx* tubular, 13-nerved, nearly equal at the base, often curved; upper lip 3-toothed, lower one bifid. *Corolla* with the upper lip nearly plane, emarginate; lower one trilobate, the middle lobe emarginate.

Nearly allied to the two preceding genera. Herbs perennial, aromatic, with purplish-red, or rose-coloured flowers.

CLINOPODIUM VULGARE. *Wild Basil.* TAB. 849.

Leaves obscurely serrated. Whorls hairy. Bracteas setaceous. Pedicles branched.

*Clinopodium vulgare*, *E. B.* 1401. *Smith* III. 105. *Lindley* 205.

*Hooker ed.* 2. 280. *ed.* 3. 284. *Melissa Clinopodium*, *Bentham, Macreight Man. Brit. Bot.* 182.

Not unfrequent on gravelly and calcareous hills, by road-sides, and in dry, bushy places, rising to a foot or 18 inches high, and flowering in August. Whole herb clothed with soft hairs. Stems wavy, with blunt angles. Leaves ovate. Whorls many-flowered, seldom more than 2 or 3, the uppermost terminating the stem abruptly. Corolla large, handsome, rose-purple.

GENUS CCCXVII. MELITTIS. *Bastard Balm.*

GEN. CHAR. *Calyx* large, campanulate, irregularly veined; upper lip 2 or 3-toothed, or obscurely 2-lobed; lower one bilobate, the lobes roundish, sometimes emarginate. *Corolla* with the tube twice as long as the calyx: the limb dilated; upper lip nearly flat, entire; the lower one with 3 rounded, nearly equal lobes.

Perennial herbs with large, ornamental, reddish or white flowers.

MELITTIS MELISSOPHYLLUM. *Bastard-Balm.* TAB. 850. & 851.

Leaves oblongo-ovate or cordate.

*a.* corolla yellowish-white, middle lobe of the lower lip purple with a white margin. Tab. 850.

*Melittis grandiflora*, *E. B.* 636. *Smith* III. 112. *Lindley* 205. *M. melissophyllum*, *Hooker ed.* 2. 281. *ed.* 3. 284.

*β.* corolla reddish, the lower lip spotted with dark crimson or purple. Tab. 851.

*Melittis Melissophyllum*, *E. B.* 577. *Lindley* 205.

This highly beautiful labiate plant is only found in the south and south-western counties of England, where it seems to prefer shady and rather moist situations in woods, and under hedges. The lobing of the calyx, assumed in the early edition of the "English Botany," as a specific distinction, is found to be exceedingly variable, as well as the colour and markings of the corolla. Stem erect, from a foot to 18 inches high. Flowers in May and June. The herb has an unpleasant, though somewhat aromatic odour when fresh, but when dried it resembles that of new-mown hay. It is a handsome adjunct to the flower-garden, and requires no care in cultivation provided it be planted in a shady or moist spot; but in a dry soil or exposed to the full sun it is very apt to be lost.

GENUS CCCXVIII. PRUNELLA. *Self-heal.*

GEN. CHAR. *Calyx* campanulate, closed when in fruit; upper lip plane, slightly tridentate; the lower shorter, bifid;



the orifice naked. *Corolla* with the upper lip nearly entire, concave; the lower trifid; tube exserted. *Filaments* forked, or with 2 teeth at the apex, one of which bears the anther, the other naked.

Hardy herbaceous plants with blue, purple, or white flowers. They are seldom seen in cultivation, though some of the species are sufficiently ornamental, and their medicinal virtues have been long disused. The curious structure of the filaments forms the chief character of the genus.

**PRUNELLA VULGARIS.** *Common Self-heal.* TAB. 852.

Leaves entire, oblongo-ovate, petiolate. Upper lip of the calyx truncate, its teeth nearly obsolete.

*Prunella vulgaris*, *E. B.* 961. *Smith* III. 114. *Lindley* 205. *Hooker* ed. 2. 281. ed. 3. 285.

Common in meadows, pastures, on commons and road-sides, and even in woods, in all soils and aspects: it varies, however, greatly in size, and seems to prefer a moist and shady spot. Stems one inch to a foot in height, terminating in a dense, solitary, cylindrical, blunt spike of violet-purple flowers, which come out in June and July. A white-flowered variety is occasionally met with. The whole herb is more or less hairy. It was once in repute as a vulnerary, and employed especially in gargle for sore throats and ulcers of the mouth and fauces; whence probably its generic name, originally written *Brunella*, is derived from the German, *bräune*, the *quinsey*; and the English Self-heal, as suggested by Sir J. E. Smith, is a corruption of its old appellation Slough-heal. Perennial.

**GENUS CCCXIX. SCUTELLARIA.** *Skull-cap.*

**GEN. CHAR.** *Calyx* campanulate, with a conspicuous concave scale on the upper side; lips nearly equal, entire, closed after flowering. *Corolla* with the tube much exserted; upper lip compressed, nearly entire, vaulted; lower one trifid.

Herbs all perennial, differing greatly in habit and inflorescence. The peculiarity of the calyx, so well expressed by the English name, Skull-cap, is the distinguishing feature of the genus; which is chiefly distributed over the temperate and colder regions of Europe, Asia, and North America, but occasionally extends within the tropics, and even into the southern hemisphere.

**SCUTELLARIA GALERICULATA.** *Common Skull-cap.* TAB. 853.

Leaves lanceolate, cordate at the base, crenated. Flowers axillary, solitary.

*Scutellaria galericulata*, *E. B.* 523. *Smith* III. 113. *Lindley* 204. *Hooker* *ed.* 2. 281. *ed.* 3. 285.

Common on the banks of rivers, ponds, and ditches, especially in a gravelly soil, growing to the height of 10 or 12 inches, and flowering in July and August. Stem erect, branched about the middle. Leaves somewhat rugose, very regularly notched, clothed as well as the stem with very short hairs. Flowers nearly sessile, the two opposite ones generally drooping together on the same side of the stem. Corolla hairy, blue or purple with white streaks on the lower lip.

SCUTELLARIA MINOR. *Lesser Skull-cap.* TAB. 854.

Leaves oblongo-ovate, nearly entire or subserrated; cordate and sometimes lobed at the base. Flowers axillary, solitary.

*Scutellaria minor*, *E. B.* 524. *Smith* III. 113. *Lindley* 204. *Hooker* *ed.* 2. 281. *ed.* 3. 285.

Less frequent than the preceding species, but found in tolerable abundance on moist heaths and moors in many parts of the kingdom. Stem seldom more than 4 or 5 inches high, branched toward the lower part. Leaves mostly entire, but occasionally crenated toward the base, or lobed so as to become somewhat hastate. Corolla pale pink or rose-colour, sometimes blueish; the lower lip white, speckled with red. Flowers in July and August.

## ORDER II. ANGIOSPERMIA.

\* *Calyx* 4-cleft.

The plants of this section, those of the genus *Lathræa* excepted, almost universally become black in drying.

GENUS CCCXX. BARTSIA. *Bartsia*.

*Nat. Order.* SCROPHULARINEÆ.

GEN. CHAR. *Calyx* campanulate or tubular (mostly coloured). *Corolla* ringent, with a contracted orifice: upper lip arched, entire; lower one in 3 nearly equal, entire, reflexed lobes. *Stamens* shorter than the upper lip. *Anthers* downy. *Capsule* ovate, compressed, acuminate, 2-celled. *Seeds* numerous, angular.

A small genus of annual or perennial herbs, natives of the temperate and colder regions of the northern hemisphere. They are plants of humble growth, with sufficient beauty to interest the observer of nature, but seldom met with in culti-



vation, and destitute of available properties. *B. coccinea* of Linnæus and Pursh, an American species of remarkable beauty, with yellow flowers and brilliant crimson or scarlet bractees, is now referred to another genus.

**BARTSIA ALPINA.** *Alpine Bartsia.* TAB. 855.

Root creeping. Stem square. Leaves opposite, ovato-cordate, bluntly serrated. Flowers in a terminal, short leafy spike.

*Bartsia alpina*, *E. B.* 361. *Smith* III. 117. *Lindley* 190. *Hooker* ed. 2. 282. ed. 3. 285.

Rare, in rocky alpine pastures in the north of England and in Scotland. It prefers moist situations on the borders of rills, or in the crevices of rocks and precipices. Stems 6 or 8 inches high, simple. Calyx clothed with viscid hairs, the segments more or less tinged with purple, as well as the floral leaves. Corolla thrice the length of the calyx, of a deep violet-purple, downy, viscid. Anthers very hairy. Style as long or longer than the corolla. Perennial. Flowers in June and July.

**BARTSIA VISCOSA.** *Yellow viscid Bartsia.* TAB. 856.

Root fibrous. Stem round. Leaves lanceolate, inciso-serrate; upper ones alternate. Flowers solitary, axillary, rather distant.

*Bartsia viscosa*, *E. B.* 1045. *Smith* III. 118. *Lindley* 190. *Hooker* ed. 2. 282. ed. 3. 286.

A local rather than rare species, growing in moist pastures on the west side of the island only, as in Cornwall, Devonshire, and Lancashire in England, in Wales, and in Argyleshire in Scotland. It is likewise found in the south of Ireland and in Jersey. Whole herb downy and viscid. Stem erect, mostly simple, 6 inches to a foot in height. Calyx tubular, nearly as long as the corolla, ribbed, pale-coloured. Corolla yellow, with a musky scent. Annual. Flowers in August.

**BARTSIA ODONTITES.** *Red Bartsia.* TAB. 857.

Root fibrous. Stem square, branched. Leaves lanceolate, serrated. Bractees alternate. Flowers in unilateral racemes.

*Bartsia Odontites*, *E. B.* 1415. *Smith* III. 119. *Lindley* 191. *Hooker* ed. 2. 282. ed. 3. 286. *Euphrasia Odontites*, *Linn.* *Odontites rubra*, *Macreight Man. Brit. Bot.* 173.

A very common weed in arable land, especially where the soil is calcareous. Stem square, with opposite branches, terminating in several long, leafy, unilateral racemes of purplish-red flowers. Calyx hairy, purplish, occasionally 5-cleft. Anthers hairy on the back only. Annual. Flowers from July to September.

GENUS CCCXXI. EUPHRASIA. *Eye-bright.**Nat. Order.* SCROPHULARINEÆ.

GEN. CHAR. *Calyx* campanulate. *Corolla* tubular, bilabiate; the upper lip divided; the lower one expanded, with 3 nearly equal lobes; the segments emarginate. Cells of the *anthers* unequally spurred at the base. *Capsule* ovate, compressed, obtuse, emarginate. *Seeds* striated.

Annual herbs, slightly bitter and astringent to the taste, and formerly esteemed efficacious in disorders of the eye, whence both the generic and vulgar names. Flowers various.

EUPHRASIA OFFICINALIS. *Common Eye-bright.* TAB. 858.

Leaves ovate, furrowed, sharply toothed.

*Euphrasia officinalis*, *E. B.* 1416. *Smith* III. 122. *Lindley* 191. *Hooker* ed. 2. 282. ed. 3. 286.

An elegant little plant, frequent on open heathy ground and dry mountainous pastures throughout the kingdom. Stems from 1 to 6 or 8 inches high, sometimes branched. Flowers axillary, solitary, sessile; crowded at the extremities of the stem and branches. Corolla large and conspicuous, compared with the size of the plant, white or pinkish, deeply streaked with purple. Anthers slightly tomentose, varying in the length of their spurs, which are sometimes wanting. Though long fallen in repute among the learned, the herb infused in milk is still employed by rustic practitioners as a remedy for weak or impaired vision, and like other weak astringents not without beneficial effect. Flowers from July to September.

GENUS CCCXXII. RHINANTHUS. *Rattle.**Nat. Order.* SCROPHULARINEÆ.

GEN. CHAR. *Calyx* ventricose. *Corolla* tubular, bilabiate; the upper lip laterally compressed; the lower one flat, 3-lobed. *Capsule* 2-celled, obtuse, compressed, covered by the calyx. *Seeds* compressed, bordered; imbricated within the capsule.

Annual herbs with yellow flowers. Some of the species are ornamental. They appear to be nearly insipid.

RHINANTHUS CRISTA-GALLI. *Common Yellow Rattle.*  
TAB. 859.

Stem simple, or slightly branched. Leaves lanceolate, serrated.



Flowers loosely spiked. Calyx smooth. Style included. Seeds with a broad membranous border.

*Rhinanthus Crista-Galli*, *E. B.* 657. *Smith* III. 120. *Lindley* 190. *Hooker* ed. 2. 282. ed. 3. 286.

Frequent in meadows and pastures, growing a foot or more in height, and flowering in June. Stem quadrangular, smooth, often spotted with red or purple. Leaves opposite, sessile, very sharply serrated. Flowers in the axils of the upper leaves, forming a lax, leafy, terminal spike. Calyx permanent, bladdery, beautifully netted with veins; contracted at the orifice after flowering. Corolla bright yellow, the upper lip tipped with 2 blue spots. Anthers hairy. The seeds when ripe rattle in the dry capsule, hence the English name.

**RHINANTHUS MAJOR.** *Large bushy Yellow Rattle.* TAB. 859\*.

Stem much-branched. Leaves linear-lanceolate, serrated; the upper ones and bractees especially taper-pointed. Flowers in crowded spikes. Calyx smooth. Style subexserted. Seeds with a narrow membranous border.

*Rhinanthus major*, *E. B. Supp.* 2737. *Smith* III. 121. *Lindley* 190. *Hooker* ed. 2. 283. ed. 3. 286. *R. Crista-Galli*,  $\beta$ , *Linn.*

Frequent in corn-fields in the north of England, where in a peaty soil it sometimes almost destroys the crops. A larger plant than the preceding, always more branched, and with narrower leaves and denser spikes. Germen narrower and more tumid. Seeds with the membranous border nearly obsolete. Flowers in July, or 2 or 3 weeks later than *R. Crista-Galli*. Corolla yellow, the segments of the upper lip tipped with purple.

**GENUS CCCXXIII. MELAMPYRUM.** *Cow-Wheat.*

*Nat. Order.* SCROPHULARINEÆ.

**GEN. CHAR.** *Calyx* tubular. *Corolla* tubular, bilabiate; the upper lip laterally compressed, turned back at the margin; the lower one furrowed and trifid. *Capsule* oblong, oblique, opening on one side, 2-celled: cells 1-seeded. *Seeds* gibbous at the base, large.

The seeds of this genus resemble grains of wheat, hence the generic name, from μέλας, black, and πῦρδος, wheat, probably in allusion to the black hue which the plants assume in drying. All of the species are annual, they have opposite leaves, and yellow flowers, sometimes with a tinge of purple about the lips. The coloured and elegantly laciniated bractees of *M. arvense* and *M. cristatum*, which are indigenous species, render them worthy of a place in the flower-garden, especially as they readily spring from fresh seed and propa-

gate without care in suitable soils. Cows are fond of the herbage.

MELAMPYRUM CRISTATUM. *Crested Cow-Wheat.* TAB. **860.**

Flowers in dense, 4-sided, terminal spikes. Bracteas cordato-acuminate, finely toothed about the base; imbricated.

*Melampyrum cristatum*, *E. B.* 41. *Smith* III. 123. *Lindley* 195. *Hooker ed.* 2. 283. *ed.* 3. 287.

A native of woods, thickets, and corn-fields in the eastern and midland counties of England. Stem branched, often bushy, a foot or more in height. Leaves linear-lanceolate, entire. Bracteas dilated at the base, where they are very elegantly bordered with cilia-like teeth and tinged with rose-colour. Corolla yellow, the upper lip purple within. A beautiful species. Flowers in July.

MELAMPYRUM ARVENSE. *Purple Cow-Wheat.* TAB. **861.**

Flowers in lax, conical, terminal spikes. Bracteas lanceolate, pinnatifid, with setaceous segments. Calyx-teeth much longer than the tube. Corolla closed.

*Melampyrum arvense*, *E. B.* 53. *Smith* III. 124. *Lindley* 195. *Hooker ed.* 2. 283. *ed.* 3. 287.

A more local plant than the preceding, being chiefly confined to the neighbourhood of Norwich, and rare in other habitats. It grows on dry gravelly banks and in corn-fields, rising to the height of a foot or 18 inches, and flowering in July. Stem branched, quadrangular. Leaves lanceolate, acuminate; the upper ones pinnatifid at the base, with linear segments. Inflorescence large and handsome, the flowers and bracteas presenting various intermingled shades of yellow, rose-colour, purple, and green.

MELAMPYRUM PRATENSE. *Common Yellow Cow-Wheat.* TAB. **862.**

Leaves linear-lanceolate, in distant pairs. Flowers axillary, unilateral. Upper bracteas pinnatifid, or toothed at the base. Corolla 4 times as long as the calyx, closed; the lower lip protruding.

*Melampyrum pratense*, *E. B.* 113. *Smith* III. 125. *Lindley* 195. *Hooker ed.* 2. 283. *ed.* 3. 287.

β. an alpine var. Smaller, somewhat succulent. Bracteas quite entire. *M. montanum*, *Johnst. Fl. of Berwick-upon-Tweed.*

Common in woods and thickets, but not in meadows as the specific name would imply, hence liable to be confounded with the following species. Stem angular, with opposite branches; weak and slender, from 12 to 18 inches high. Corolla pale yellow, sometimes tinged with purple toward the base; lips orange or deep yellow. Flowers from June to August.



MELAMPYRUM SYLVATICUM. *Small-flowered Yellow Cow-Wheat. Wood Cow-Wheat.* TAB. 863.

Leaves linear-lanceolate, in distant pairs. Flowers axillary, unilateral. Bractæas entire (or nearly so). Corolla scarcely twice as long as the calyx, slightly gaping; the lower lip deflexed.

*Melampyrum sylvaticum*, *E. B.* 804. *Smith* III. 126. *Lindley* 195. *Hooker* ed. 2. 284. ed. 3. 287.

Rare; in alpine woods in the north of England, and in Scotland. Nearly resembling the preceding species in habit, the smallness of the flowers, and peculiarities dependent upon the contraction of the corolla, yielding the only important distinctions. We defer to the general opinion of British botanists in retaining this plant as a separate species; in our own estimation it is a mere variety of *M. pratense*. Flowers in July.

## GENUS CCCXXIV. LATHRÆA. *Tooth-Wort.*

*Nat. Order.* OROBANCHEÆ.

GEN. CHAR. *Calyx* campanulate. *Corolla* tubular, bilabiate; the upper lip helmet-shaped. *Germen* with a depressed gland at the base. *Capsule* 2-valved, 1-celled, with 2 spongy receptacles in the middle of each valve.

Parasitical herbs, growing upon the roots of trees, chiefly those of the amentaceous and allied orders. Like *Monotropa*, *Orobanche*, and other plants of similar habit, they are of a succulent texture, and have a reduced foliage in the form of scales, which, in place of the vegetable green usually characterizing leaves, are of a pale fungus-like hue, and may be considered rather to represent than to perform the functions of those organs.

LATHRÆA SQUAMARIA. *Greater Tooth-wort.* TAB. 864.

Stem creeping, branching from the base. Flowering branches erect, simple. Flowers axillary, unilateral, pendulous. Upper lip of the corolla cloven; lower one 3-lobed.

*Lathræa squamaria*, *E. B.* 50. *Smith* III. 127. *Lindley* 194. *Hooker* ed. 2. 284. ed. 3. 288.

Found in shady woods and plantations in many parts of the kingdom, growing upon the roots of trees, chiefly the hazel, elm, or walnut, and generally half-buried in decayed leaves. The whole plant is succulent, and thickly clothed at the base with fleshy tooth-like scales, whence the English name. Bractæas broadly ovate, membranaceous, and, as well as the calyx and other parts, of a pale tawny or brownish hue. Corolla and anthers dingy purple. Flowers in April and May.

\*\* *Calyx 5-cleft* (in *Pedicularis* irregular).

GENUS CCCXXV. PEDICULARIS. *Louse-wort.*

*Nat. Order.* SCROPHULARINEÆ.

GEN. CHAR. *Calyx* ventricose, 5-cleft, or unequally 2- or 3-lobed, jagged, somewhat leafy. *Corolla* tubular, bilabiate; the upper lip long, laterally compressed, arched, often emarginate; the lower one flat, expanded, 3-lobed. *Capsule* oblique, compressed, acuminate, 2-celled.

Herbaceous perennials, with inciso-dentate or pinnatifid leaves, and showy purple, red, or yellow flowers. They are slightly acrid in flavour, but not sufficiently so to render them unpalatable to sheep and goats, to the former of which, however, they have been supposed to communicate the disorder implied by their generic name; a disorder now ascertained to arise rather from the animals feeding in the marshy ground where these plants grow. The genus is one of the most beautiful in the Flora of cold countries; our native species are highly elegant plants, though mere dwarfs in comparison with some of their congeners, and *P. Sceptrum-Carolinum*, which decorates in abundance the mountain-woods and swamps of Lapland, rising to the height of 2, 3, or even 5 feet, is a truly splendid production.

PEDICULARIS PALUSTRIS. *Marsh Louse-wort. Tall Red-Rattle.* TAB. 865.

Stem solitary, branched above. *Calyx* broadly ovate, hairy, ribbed; with 2 crenated, nearly equal lobes.

*Pedicularis palustris*, *E. B.* 399. *Smith* III. 129. *Lindley* 190. *Hooker* ed. 2. 284. ed. 3. 288.

Not unfrequent in wet meadows and marshes, especially in a peaty soil. Stem solitary, erect, about a foot high, branched. Leaves scattered, pinnate; the pinnæ deeply lobed and cut; bright green. Flowers axillary, solitary, large, handsome: corolla deep rose-colour, rarely white. Some doubt exists as to this beautiful plant being perennial, though it is generally noted as such; the root has all the appearances of being annual, and we have frequently drawn it up in the early spring attached to the last year's stem without any appearance of vitality. Flowers in June and July.

PEDICULARIS SYLVATICA. *Pasture Louse-wort. Dwarf Red-Rattle.* TAB. 866.

Stem branched from the base and spreading. *Calyx* oblong, angular, smooth; in 5 unequal, crenate, leafy segments.



*Pedicularis sylvatica*, *E. B.* 400. *Smith* III. 129. *Lindley* 190. *Hooker* ed. 2. 284. ed. 3. 288.

Common on moist pastures and heaths. A much smaller plant than the preceding, sending up a central stem from 3 to 6 inches high, and several procumbent branches. Root-leaves mostly undivided, ovate or oblong, and irregularly crenated; those of the stem pinnatifid, the lobes crenated and cut, but less divided than in *P. palustris*. Flowers axillary, solitary, large, handsome. Calyx smooth (in which respect our figure is incorrect), the segments unequal and mostly leafy. Corolla rose-colour, rarely white. Perennial. Flowers in June and July.

## GENUS CCCXXVI. LINARIA. *Toad-Flax*.

*Nat. Order.* SCROPHULARINEÆ.

GEN. CHAR. *Calyx* 5-parted. *Corolla* personate, spurred at the base; tube inflated; mouth closed by a projecting palate; upper lip bifid, reflexed; lower one 3-lobed. *Capsule* ovate or globose, 2-celled, opening at the apex with several valves. *Seeds* bordered.

An extensive and well-marked genus consisting chiefly of annual or perennial herbs, a few only assuming a shrubby character. The species are very widely distributed, being met with in most parts of the globe, but their principal station is in the temperate parts of the northern hemisphere, more especially southern Europe, and the neighbourhood of the Mediterranean. Inflorescence various, generally ornamental, though in their native sites many are troublesome weeds. The spur-like process at the base of the corolla distinguishes these plants from those of the following genus, *Antirrhinum*, with which they were originally confounded.

\* *Stems procumbent. Leaves broad.*

LINARIA CYMBALARIA. *Ivy-leaved Toad-Flax*. TAB. 867.

Stems trailing. Leaves cordate, 5-lobed, smooth, alternate.

*Antirrhinum Cymbalaria*, *Linn.* *E. B.* 502. *Smith* III. 131. *Linaria Cymbalaria*, *Lindley* 191. *Hooker* ed. 2. 285. ed. 3. 289.

This elegant little trailer, originally introduced from Italy, has long spurned the confinement of the garden which it was brought to adorn, and wandering free and wild, clothes with its rich evergreen foliage old walls and ruins (especially in the vicinity of the Thames), from the smoky wharfs and quays of the metropolis to the purer air of the suburban towns and villages; and its dominion is extending, as wherever planted it is sure to establish a colony. Branches very long,

filiform, intertwining and forming a thick tapestry as they extend. Leaves dark green and glossy above, purplish beneath, rather fleshy, on long, curving petioles. Flowers solitary, on long axillary peduncles. Corolla purple, with a yellow, downy palate. Perennial. Flowers throughout the summer and autumn.

**LINARIA SPURIA.** *Round-leaved Fluellen, or Toad-Flax.* TAB. 868.

Stems procumbent. Leaves ovate, downy, mostly alternate.

*Antirrhinum spurium*, Linn. *E. B.* 691. *Smith* III. 131. *Linaria spuria*, Lindley 191. *Hooker* ed. 2. 285. ed. 3. 289.

Frequent in dry arable land in the eastern and south-eastern parts of England, and occasionally elsewhere in a sandy or chalky soil. Whole plant hairy, trailing along the ground. Leaves roundish-ovate, those nearest to the root sometimes evincing a tendency to become angular and even lobed. Peduncles axillary, 1 to 2 inches long, each bearing a single flower. Upper lip of the corolla violet, lower one yellow; spur rather sharply recurved. Annual. Flowers from July to September.

**LINARIA ELATINE.** *Sharp-pointed Fluellen, or Toad-Flax.* TAB. 869.

Stems procumbent. Leaves cordato-hastate, acute, alternate; the lowermost inclining to ovate, opposite.

*Antirrhinum Elatine*, Linn. *E. B.* 692. *Smith* III. 132. *Linaria Elatine*, Lindley 191. *Hooker* ed. 2. 285. ed. 3. 289.

Rather more frequent, but growing in similar situations and often accompanying the last species, which it greatly resembles in habit, and in the form and colour of the flowers; but is a weaker plant, generally smaller in all its parts, and well distinguished by its angular, sharp-pointed leaves. Whole plant more or less hairy. Annual. Flowers from June to September.

**\*\* Stems erect. Leaves linear.**

**LINARIA REPENS.** *Creeping pale blue Toad-Flax.* TAB. 870.

Stem erect, paniced. Leaves linear, glaucous, scattered, or partly whorled. Calyx smooth, as long as the spur.

*Antirrhinum repens*, Linn. *E. B.* 1253. *Smith* III. 133. *A. Mons-pessulanum*, Linn. *Linaria repens*, Lindley 191. *Hooker* ed. 2. 286. ed. 3. 289.

Rare, on chalky and rocky places near the sea, chiefly in the south of England and Ireland. Where once established spreading widely by means of its creeping surculi, which are difficult to eradicate. Stems erect, very slender, leafy, branched; from 1 to 2 feet high. Flowers in long paniced racemes. Corolla pale blue with deeper striæ and a yellow palate, lower lip sometimes tinged with pink; sweet-scented. Very smooth and glaucous. A highly elegant plant, but from its creeping habit liable to become a troublesome weed in the flower-garden. Perennial. Flowers from July to September.



*Linaria purpurea*, Bot. Mag. Tab. 99., a species nearly allied to this, but without the creeping surculi, with the leaves more frequently whorled, longer racemes, and deep purple flowers; has perhaps an equal claim to a place in the British Flora, having long since escaped from the limits of the garden, and flourished wild upon old walls and ruins in many parts of the kingdom. It was introduced from the south of Europe, of which *L. repens* is likewise a native. A figure will probably appear shortly in the supplement to the original edition of the English Botany now in course of publication.

**LINARIA VULGARIS. *Yellow Toad-Flax.* TABS. 871 & 872.**

Stems erect. Leaves linear-lanceolate, scattered, crowded, somewhat glaucous. Spikes terminal. Flowers imbricated. Calyx smooth, shorter than the spur.

Antirrhinum Linaria, *Linn. E. B.* 658. *Smith* III. 134. Linaria vulgaris, *Lindley* 191. *Hooker ed.* 2. 286. *ed.* 3. 289.

β. Peloria. Corolla regular, with 5 spurs. Stamens 5, equal. Antirrhinum Linaria, *var.* Peloria. Deformed Yellow Toad-Flax, *E. B.* 260. Tab. 872.

Common in hedges, and on road-sides and the borders of fields, creeping widely underground like *A. repens*. Herb very smooth, and generally with a glaucous hue. Stems 1 to 2 feet high, little branched, mostly simple. Leaves linear, inclining to lanceolate, thickly set. Flowers large, bright yellow, with orange palate, hence its homely appellation, "Butter-and-eggs." Its beauty would render it a frequent inmate of the garden were its habit less intrusive. With us it is rarely found in the open field, but according to Pursh, it is "one of the worst and most troublesome weeds in some parts of Pennsylvania and Virginia."

Var. β., Tab. 872, affords curious evidence of the irregular flowers of Didynamous plants being merely a secession from the normal quinary arrangement, occasioned by, or involving, the abortion of a stamen. Similar variations occur in other species of the genus and of the class generally, and they are indeed far from uncommon both in wild and cultivated specimens; though seldom extending, as in this instance, to all of the flowers upon a plant, they have been less frequently noticed. The rudiments of the abortive stamen may in the majority of cases be readily traced by a careful inspection of the place it should occupy. Perennial. Flowers in June and July.

**LINARIA MINOR. *Least Toad-Flax.* TAB. 873.**

Stem erect, much-branched. Leaves linear-lanceolate, obtuse, mostly alternate, downy. Calyx longer than the spur.

Antirrhinum minus, *Linn. E. B.* 2014. *Smith* III. 135. Linaria minor, *Lindley* 192. *Hooker ed.* 2. 286. *ed.* 3. 290.

This inconspicuous species is an occasional native of sandy or chalky fields, principally in the eastern and south-eastern counties of England. It is a bushy little plant, varying in height and luxuriance,

being often not more than 2 or 3 inches, and sometimes near a foot high. Flowers very small, on solitary, axillary peduncles. Corolla purple and yellow or white; the spur very short. Annual. Flowers in June and July.

GENUS CCCXXVII. ANTIRRHINUM. *Snapdragon.*

*Nat. Order.* SCROPHULARINEÆ.

GEN. CHAR. *Calyx* 5-parted. *Corolla* personate, gibbous at the base (without a spur); tube inflated; mouth closed by a projecting palate; upper lip bifid, reflexed; lower one 3-lobed. *Capsule* oblique, 2-celled, opening by 3 pores at the apex.

The original genus, *Antirrhinum* of Linnæus, included *Linaria*, which separated by modern botanists reduces the former within very narrow limits. The almost total abbreviation of the spur, and porous dehiscence of the capsule are the only features of distinction. Plants annual or perennial. Flowers various.

ANTIRRHINUM MAJUS. *Great Snapdragon.* TAB. 374.

Leaves lanceolate, mostly alternate. Racemes spike-like, dense, many-flowered. Segments of the calyx ovate, obtuse, shorter than the corolla.

*Antirrhinum majus*, *E.B.* 129. *Smith* III. 135. *Lindley* 192. *Hooker ed.* 2. 285. *ed.* 3. 288.

This beautiful plant, now so common upon old walls, rocks, and chalk cliffs, especially in the midland and southern counties of England, is without doubt a wanderer from the garden, into which it was probably introduced at an early period from the continent. Stems erect, very bushy, 1 to 2 feet high; half shrubby; smooth as well as the leaves. Flowering branches viscid. Flowers large, on short pedicles, imbricated in dense terminal racemes. Corolla various shades of purple-red, rose-colour, or white; in all cases with a bright yellow, downy palate: when pressed laterally between the thumb and finger, it gapes, closing again when the pressure is removed; hence the vulgar name, which is, however, equally applicable to the genus *Linaria*. The great Humble or Humming Bees, *Bombi*, avail themselves of the elasticity of the large blossoms of this species for the purpose of collecting the honey and pollen, the lip closing over them as they enter the recesses of the flower, and as readily yielding them egress when satisfied with their plunder. Perennial. Flowers from July to September.



ANTIRRHINUM ORONTIUM. *Lesser Snapdragon. Calf's-snout.* TAB. 875.

Leaves linear-lanceolate, mostly alternate. Flowers sessile, in lax, terminal spikes. Segments of the calyx linear, longer than the corolla.

*Antirrhinum Orontium*, *E. B.* 1155. *Smith* III. 136. *Lindley* 192. *Hooker* ed. 2. 285. ed. 3. 289.

An occasional plant in dry corn-fields, chiefly in the east and south of England. Herb slightly hairy. Stem erect, a little branched. Flowers rose-colour, with yellow palate; remarkable for the great proportional length of the calyx, whose linear segments equalling the corolla when first expanded, soon extend far beyond it. The ripe capsule, viewed in front, bears a fanciful resemblance to the face of an animal. Annual. Flowers in July and August. Height 6 to 12 inches.

GENUS CCCXXVIII. SCROPHULARIA. *Fig-wort.*

*Nat. Order.* SCROPHULARINEÆ.

GEN. CHAR. *Calyx* 5-lobed or cleft. *Corolla* subglobose; the limb contracted, with 2 short lips; upper lip 2-lobed, frequently with a small scale (abortive stamen) within it; the lower one shorter and 3-lobed. *Capsule* roundish, acuminate, 2-valved; the valves entire, their margins turned inward.

Herbs, perennial or annual, rarely shrubs, distributed over most parts of the globe, but generally in temperate regions. They have angular stems, and opposite leaves, which in the British species are simple, undivided, and serrated. Inflorescence various, but generally of a sombre hue and not remarkable for beauty, unless to the close observer. Bitter and foetid plants, generally refused by cattle, but not possessing any very active properties.

\* *Calyx* with 5 rounded lobes. *Flowers* purplish.

SCROPHULARIA NODOSA. *Knotty-rooted Fig-wort.* TAB. 876.

Root tuberous. Stem quadrangular, the angles rather obtuse. Leaves cordate, acute, 3-ribbed at the base, doubly serrated, smooth.

*Scrophularia nodosa*, *E. B.* 1544. *Smith* III. 137. *Lindley* 193. *Hooker* ed. 2. 286. ed. 3. 290.

Frequent in woods, thickets, and moist shady places. Root fleshy, large, with many projecting knobs, which, from their fancied resemblance to scrophulous swellings, acquired for this plant in the days of signature medicine both fame and name, the former of which has long

ago been consigned to oblivion. Stem erect, simple, smooth, 2 or 3 feet high. Leaves dark shining green on the upper surface, petiolate. Flowers in dichotomous, axillary, and terminal panicles. Corolla greenish-purple, with a small scale within the upper lip opposite to the notch. Perennial. Flowers in July.

During the celebrated siege of Rochelle by Cardinal Richelieu in 1628, the garrison are said to have supported themselves in their extremity by eating the roots of this plant, hence it is termed by the French peasants, "*herbe du siège*."

**SCROPHULARIA AQUATICA.** *Water Fig-wort. Water-Betony.*  
TAB. 877.

Root fibrous. Stem quadrangular, winged at the angles. Leaves elliptical-ovate, blunt, serrated; on decurrent petioles.

*Scrophularia aquatica*, *E. B.* 854. *Smith* III. 138. *Lindley* 193. *Hooker* ed. 2. 286. ed. 3. 290.

A common plant in ditches, and in marshy spots about the banks of rivers and ponds throughout England; less frequent in the north. Whole herb glabrous, somewhat resembling the preceding species, but in general taller and stouter, and besides the fibrous character of the root, sufficiently distinguished by the membranous angles of the stem and elliptical leaves. Flowers in a terminal panicle, the branches of which are opposite, very distant, and dichotomous. Corolla greenish, the lips dark-purple, a small scale within the upper one opposite the cleft. Perennial. Flowers in July.

**SCROPHULARIA SCORODONIA.** *Balm-leaved Fig-wort.* TAB. 878.

Herb downy. Leaves cordate, doubly serrated. Panicle leafy.

*Scrophularia Scorodonia*, *E. B.* 2209. *Smith* III. 138. *Lindley* 193. *Hooker* ed. 2. 286. ed. 3. 290.

Met with only in the extreme south and south-west of England, at Tralee in Ireland, and in Jersey, where it grows in moist places about rivulets and ditches. It approaches *S. nodosa* in habit and foliage, and *S. aquatica* in the colour of the flowers, but is distinguished from both by having its stem and leaves covered with soft hairs. Perennial. Flowers in July.

\*\* *Calyx with 5 deep, acute segments. Flowers yellow.*

**SCROPHULARIA VERNALIS.** *Yellow Fig-wort.* TAB. 879.

Herb downy. Leaves broadly cordate, acute, doubly inciso-serrate. Peduncles axillary, solitary; terminating in a leafy, dichotomous cyme. No scale in the upper lip of the corolla.

*Scrophularia vernalis*, *E. B.* 567. *Smith* III. 139. *Lindley* 193. *Hooker* ed. 2. 287. ed. 3. 290.

Shady and moist places under hedges and by road-sides in many parts of the kingdom, occasionally present this pretty plant, so differ-



ent in habit from our other native species of *Scrophularia*; but the specimens are generally isolated, never abundant; the seeds being probably but sparingly matured, or otherwise, the plants, which are biennial, are incapable of bearing our winters except in very sheltered situations. The aspect of the species seems indeed to indicate its natural abode in lands nearer to the sun, the pale yet bright hue of its foliage strongly contrasting with the dark lurid green exhibited by that of its sturdy congeners. Stem 2 feet or more in height, rather sinuous toward the top, 4- or 5-angled; in the latter case the leaves, otherwise opposite, grow 3 together. Peduncles alternate above. Calyx hairy as well as the stem and leaves. Corolla inflated, yellow, contracted at the mouth, the lips being nearly abortive. Stamens and style protruding. Occasionally perhaps perennial, as remarked by some writers, but rarely surviving in this country the production of its seed. Flowers in April and May. Considerable affinity exists between this species and the Peruvian genus *Calceolaria*, as suggested by Sir J. E. Smith in the first edition of the present work.

GENUS CCCXXIX. DIGITALIS. *Fox-glove.*

*Nat. Order.* SCROPHULARINEÆ.

GEN. CHAR. *Calyx* in 5 deep, unequal segments. *Corolla* campanulate or tubular, inflated beneath: limb unequal, obliquely 4- 5-lobed. *Capsule* ovate, acuminate, 2-celled.

Plants herbaceous, biennial or perennial. They have alternate leaves, and spiked or racemose, pendent flowers, various in hue, and generally ornamental. The genus is eminently European, abounding chiefly in alpine districts. Our indigenous species is among the most stately and beautiful of its family.

DIGITALIS PURPUREA. *Purple Fox-glove.* TAB. 380.

Leaves ovato-lanceolate, crenated, downy. Segments of the calyx ovate, acute. Corolla obtuse; its upper lip scarcely cloven.

*Digitalis purpurea*, *E. B.* 1297. *Smith* III. 140. *Lindley* 192. *Hooker* ed. 2. 287. ed. 3. 291.

This magnificent plant often abounds in dry, hilly, or rocky and subalpine districts throughout the kingdom, but is rare in low situations, especially in the alluvial eastern counties of England. Stem solitary, 3 or 4 feet high, downy, terminating in a raceme of large pendulous flowers. Leaves downy, rugged, and deeply veined. Calyx downy. Corolla campanulate, the tube an inch and a half long, of a rich purplish crimson, elegantly speckled and hairy within: rarely white. This *Digitalis* is a highly useful and powerful remedy in the hands of the modern physician, to whose notice it was introduced by the late Dr. Withering, as well known in the annals of botany as in

those of medicine. It is, however, a drug requiring much caution in the administration, its influence over the circulatory system being apt to accumulate, sometimes lying dormant through repeated doses, and then with collected force suddenly suspending the action of the heart, and with it the life of the patient. Such cases of sudden death are on record as occurring during the earlier application of this fearful yet salutary medicine, but the practitioner of the present day is too well aware of its insidious character to commit a similar error. Biennial or perennial, according to situation. Flowers in June and July.

GENUS CCCXXX. SIBTHORPIA. *Sibthorpia*.

*Nat. Order.* SCROPHULARINEÆ.

GEN. CHAR. *Calyx* in 5 deep, spreading segments. *Corolla* subrotate; the tube short; the limb 5-cleft, the 2 lower segments narrowest. *Stigma* dilated. *Capsule* compressed, orbicular, dehiscing at the apex, 2-celled.

The genus probably does not consist of more than a single species.

SIBTHORPIA EUROPÆA. *Creeping Sibthorpia. Cornish Money-wort.* TAB. 331.

*Sibthorpia europæa*, *E. B.* 649. *Smith* III. 143. *Lindley* 192. *Hooker ed.* 2. 288. *ed.* 3. 291.

A curious and elegant little herbaceous plant, growing in moist shady places about springs and rivulets, in the south-west of England and south of Ireland. Hairy. Root fibrous. Stems filiform, creeping and rooting as they extend. Leaves alternate, reniform, nearly orbicular, with shallow, distant, rounded crenatures. Flowers very small, axillary, solitary, on short peduncles. Corolla pinkish-white, or yellowish. Perennial. Flowers from June to October. Easy of cultivation; its delicate green foliage well adapted for covering moist or shaded rock-work.

GENUS CCCXXXI. LIMOSELLA. *Mud-wort.*

*Nat. Order.* SCROPHULARINEÆ.

GEN. CHAR. *Calyx* 5-cleft, nearly equal. *Corolla* campanulate, equal, 5-cleft. *Stamens* nearly equal, sometimes (by abortion) 2. *Stigma* capitate. *Ovarium* half 2-celled. *Capsule* globose, 1-celled, 2-valved.

Small annual herbs growing in mud and shallow waters.



LIMOSELLA AQUATICA. *Common Mud-wort.* TAB. 882.

Leaves lanceolate, somewhat spathulate. Scapes shorter than the petioles.

*Limosella aquatica*, *E.B.* 357. *Smith* III. 145. *Lindley* 192. *Hooker* *ed.* 2. 287. *ed.* 3. 291.

Not unfrequent in muddy places, and where water has lain stagnant through the winter, in most parts of the kingdom, but often overlooked on account of its small size. Though only an annual, the root throws out prostrate runners, which take root at their extremities and form new plants. Leaves all radical, 1 or 2 inches in length, including the petiole, perfectly smooth and entire. Flowers very small, on short radical peduncles, which, as in many other plants of prostrate growth, curve downwards when in fruit and bury their seed. Corolla pale rose-colour. Anthers 1-celled, purplish. Flowers in July and August.

GENUS CCCXXXII. VERBENA. *Vervain.*

*Nat. Order.* VERBENACEÆ.

GEN. CHAR. *Calyx* tubular, with 5 teeth, one of them generally shorter than the rest. *Corolla* funnel-shaped; the limb nearly equal, 5-cleft. *Stamens* included, sometimes (by abortion) only 2. *Seeds* 2 or 4, inclosed in a thin, evanescent pericarp.

A genus of annual or perennial herbaceous plants, chiefly American. Many of them are mere weeds, others, especially the trailing species, are very ornamental. Leaves opposite, entire, or variously cut and divided, in the latter case mostly in a ternary manner. They are very slightly astringent, but the common Vervain had formerly many potent virtues assigned to it.

VERBENA OFFICINALIS. *Common Vervain.* TAB. 883.

Stem erect, hispid. Leaves rough, lanceolate, deeply inciso-serrate, or trifid with the segments cut. Spikes slender, paniced. Flowers rather distant. Stamens 4.

*Verbena officinalis*, *E.B.* 767. *Smith* III. 71. *Lindley* 196. *Hooker* *ed.* 2. 288. *ed.* 3. 291.

A frequent plant on road-sides and waste places, especially near villages, in most parts of England, but rare in the northern parts of the island, and likewise in Ireland. Stem 1 to 2 feet high, seldom branched except being paniced at the top, and as well as the leaves rough with little prickles. Flowers very small. Calyx rough. Corolla pale-lilac. Stamens included, short, curved: being in many species of the genus only two in number, as occasionally indeed occurs in this, Linnæus placed *Verbena* in his second class *Diandria*.

From the appearance of the 4 seeds in the bottom of the calyx, after the shrinking of the fugitive capsule, Sir J. E. Smith and other botanists of the day allotted it a place among the Labiate plants of the order *Gymnospermia* of the present class; but the theory of the fructification of that order being now well understood, the genus in question, under an artificial arrangement, is of necessity removed thence, although its natural affinity lies perhaps nearer to the order *Labiatae* than to any other known natural group.

The root of this plant worn suspended by a ribbon at the pit of the stomach, and an ointment prepared from the leaves, were lauded by an empiric in the latter end of the last century for their wonderful efficacy in scrophulous disorders; but the dieting and powerful course of medicine with which he always accompanied his prescriptions, were the true causes of the surprising cures ascribed to the *Vervain*. Perennial. Flowers in July.

### GENUS CCCXXXIII. LINNÆA. *Linnæa*.

*Nat. Order.* CAPRIFOLIACEÆ.

GEN. CHAR. *Calyx* 5-cleft; with 2 or 4 connate bractæas at the base. *Corolla* campanulate, 5-cleft, segments equal. *Fruit* small, ovato-globose, dry, 3-celled: 2 of the cells with many sterile ovules, the third only bearing a single perfect seed.

The only known species of the genus is a small, creeping, evergreen shrub, with opposite leaves, and drooping, twin, pink flowers. Linnæus himself selected this "little northern plant, long overlooked, depressed, abject, flowering early," as a type of his early career, and bestowed his own name upon it. A native of high latitudes and alpine districts throughout the northern hemisphere.

LINNÆA BOREALIS. *Linnæa*. TAB. 884.

*Linnæa borealis*, *E. B.* 433. *Smith* III. 142. *Lindley* 132. *Hooker ed.* 2. 288. *ed.* 3. 292.

The only English station hitherto discovered for this interesting and elegant little plant is at Hartburn, Northumberland; in Scotland it is frequent, especially in dry, stony fir-woods; its ordinary habitat in Lapland, North America, and elsewhere. Stems woody, creeping and rooting, a little branched; the young shoots hairy. Leaves opposite, petiolate, roundish-oval, obscurely crenated, slightly hairy on the upper surface. Flowering branches (peduncles) erect, leafy toward the base; terminating in 2 equal pedicles diverging from the axils of a pair of small leaves, and each bearing a solitary, drooping, slightly fragrant flower: pedicles, bractæas, germen and



calyx clothed with glandular, viscid hairs. Corolla tinged about the segments with a delicate rose-colour, the tube yellowish or white. Flowers in May and June.

\*\*\* *Calyx lateral, in 2, generally combined, often bifid segments.*

GENUS CCCXXXIV. OROBANCHE. *Broom-rape.*

*Nat. Order.* OROBANCHEÆ.

GEN. CHAR. *Calyx* 1- or 2-parted, with from 1 to 3 bracteas. *Corolla* tubular, ringent, 4- or 5-cleft. *Germen* glandular at the base. *Stigma* capitate, bilobate. *Capsule* bivalvular: placentæ parietal. *Seeds* (minute) numerous.

This genus affords an additional instance to those already noticed, of that remarkable habit of certain vegetable productions which has obtained for them the general name of parasites, and whose history is highly important in physiology as bearing evidence in favour of the generally accredited doctrine respecting the respiratory functions of leaves. Destitute of those organs, excepting in their most rudimental or debased form, and wanting the green hue, which is so universally found among the higher orders of plants as to have become a feature almost inseparable from the popular idea of vegetable being, the parasitic species are incapable of subsisting unless in organic connection with some other plant possessing both, and from which they can abstract the vital juices that their own less developed organization cannot elaborate. Hence their absorbent fibres, instead of spreading in the soil, penetrate the tissue of the supporting plant, and their seeds can only be brought to vegetate in contact with it, being found to lie dormant in the ground for years, or until they meet with the proper medium upon which to germinate. The Orobanches, like most other parasites, attach themselves to roots only, and their duration is accordant, being either annual or perennial with the plant on which they grow. They have erect, scaly, mostly simple stems, somewhat bulbous at the base, and terminating above in a spiked inflorescence. Flowers yellowish-brown, or purple of various shades, but always, as well as the rest of the plant, of a dull fungus-like hue. The generic name *Orobanche*, is derived from ὄροβος, 'a vetch or tare,' and ἄρχειν, 'to strangle,' in allusion to the mischief sometimes occasioned to crops of leguminous plants by the growth of these parasites. The predominant, and perhaps the only property, is astringency,

which in some of the species is very powerful. *O. Virginiana* is known by the name of Cancer-root in North America; and the powdered stems, mingled with white arsenic, are supposed to have formed a specific, long popular in that part of the world, under the name of “*Martin’s Cancer Powder*.”

\* *Bracteas solitary under each flower.*

OROBANCHE MAJOR. *Greater Broom-rape.* TAB. 885.

Stems simple. Corolla with the tube inflated; the upper lip undivided; the lower one in 3 nearly equal segments, the lateral ones acute, the middle more obtuse. Stamens smooth. Style downy. *Orobanche major*, *E. B.* 421. *Smith* III. 146. *Lindley* 193. *Hooker ed.* 2. 289. *ed.* 3. 292.

The most common of the British species of *Orobanche*, being often abundant in hilly situations and gravelly soils, springing from the roots of Broom and Furze, and flowering in June and July. Stems yellowish, juicy, from a foot to 18 inches high, swelling into a bulbous form toward the base, which is closely imbricated with scales. Scales more distant and scattered above, resembling the bracteas. Calyx of 2 lateral, deeply cloven segments. Corolla large, of a dingy brown or purplish hue, as are likewise the bracteas and scales: upper lip undivided; lower one 3-cleft. Lobes of the stigma yellow. Whole plant pubescent. Perennial.

OROBANCHE CARYOPHYLLACEA. *Clove-scented Broom-rape.* TAB. 885\*.

Stems simple. Tube of the corolla inflated, especially above: limb spreading; upper lip broad, emarginate; lower one 3-lobed; all of the segments obtuse, wavy. Stamens hairy, especially at the base within. Style pubescent. (Bilobate stigma dark-purple.) *Orobanche caryophyllacea*, *E. B. Supp.* 2639. *Hooker ed.* 2. 289. *ed.* 3. 292. *O. Galii*, *Bot. Gall.* 349.

Found hitherto only in the south of Kent, in Sussex and Devonshire, having been first recognized as a British plant by the Rev. G. E. Smith, who discovered it in the neighbourhood of Folkestone growing upon the roots of *Galium Mollugo*. It differs from *O. major* in the hairiness of the base of its stamens, and in the spreading limb of the corolla, as well as in the deep purple colour of the stigma, and larger and more distant flowers. Corolla pale purple, with very distinct darker veins. Whole plant hairy. Perennial. Flowers in August. It is said to grow likewise on *Rubus fruticosus*, but, as suggested by Dr. Macreight, *Man. Brit. Bot.* 175, has in such cases probably been confounded with *O. Rubi-fruticosi* of Vaucher. The limits, however, of specific distinction, are very difficult to define in this genus.

OROBANCHE ELATIOR. *Tall Broom-rape.* TAB. 886.

Stem simple. Corolla funnel-shaped; lower lip with 3 acute, nearly



equal, segments. Stamens downy. Style smooth. (Stigma yellow.)

*Orobanche elatior*, *E. B.* 568. *Smith* III. 147. *Lindley* 194. *Hooker* ed. 2. 289. ed. 3. 293.

Less frequent than *O. major* in similar situations, and sometimes in clover-fields. Its ordinary supporter is *Centaurea scabiosa*. The paler yellowish hue, and long, dense, cylindrical spike of flowers distinguish it at once from both of the preceding. Upper lip of the corolla mostly cloven. Stamens inserted high in the tube instead of at the base. Perennial. Flowers in July and August.

OROBANCHE MINOR. *Lesser Broom-rape.* TAB. 887.

Stem simple. Corolla nearly cylindrical: its upper lip nearly entire; lower with 3 curled segments, the middle one largest and lobed. Stamens ciliated. Style smooth. (Stigma purple.)

*Orobanche minor*, *E. B.* 422. *Smith* III. 148. *Lindley* 194. *Hooker* ed. 2. 289. ed. 3. 293.

Abundant in some parts of England, especially in Norfolk, Kent, and Surrey, growing in clover-fields upon the roots of *Trifolium pratense*, and some other species of the same genus. Stem 5 to 7 inches high, slender, more or less waved. Flowers smaller than in any of the preceding species. Corolla tubular, not at all ventricose; pale violet-colour, or whitish. Perennial? Flowers in July and August.

OROBANCHE RUBRA. *Red fragrant Broom-rape.* TAB. 888.

Stem simple. Corolla tubular: upper lip cloven; lower one with 3 nearly equal segments. Stamens fringed on one side at the base, with glandular hairs, as are the germen and style at their summits.

*Orobanche rubra*, *E. B.* 1786. *Smith* III. 148. *Lindley* 194. *Hooker* ed. 2. 289. ed. 3. 293.

Frequent on basalt and trap-rocks in Scotland and Ireland. Its supporter seems not to have been traced, but we believe it to be *Thymus Serpyllum*. Stem 6 inches to a foot in height, ending in a spike of 15 or 20 flowers, viscid, with glandular hairs, with which the corolla is likewise ciliated, and the stamens and pistil partially so. Whole plant purplish-red. The flowers, which have a fragrant scent like those of the Honeysuckle, and of which indeed the plant itself partakes, are in perfection about the month of July. Perennial.

\*\* *Bracteas 3 under each flower.*

OROBANCHE CÆRULEA. *Purple Broom-rape.* TAB. 889.

Stem simple. Bracteas 3 to each flower. Corolla tubular: its upper lip cloven and notched; the lower in 3 equal, entire segments. Stamens smooth. Style downy.

*Orobanche cærulea*, *E. B.* 423. *Smith* III. 149. *Lindley* 194. *Hooker* ed. 2. 289. ed. 3. 293.

A rare species; found only in maritime pastures, attached to the

roots of *Artemisia vulgaris* and *A. maritima*, chiefly in Norfolk. Whole plant of a bluish hue, with a glaucous or mealy appearance. Corolla blue or purplish. Perennial. Flowers in July.

OROBANCHE RAMOSA. *Branched Broom-rape.* TAB. 890.

Stem branched. Bracteas 3 to each flower. Upper lip of the corolla deeply cloven; lower one equally trilobate; the segments all rounded and entire. Style subglabrous.

*Orobanche ramosa*, *E. B.* 184. *Smith* III. 150. *Lindley* 194. *Hooker ed. 2.* 290. *ed. 3.* 293.

Found principally in Norfolk and Suffolk, attached to the roots of Hemp, in moist, rich soil. The most elegant native species of its genus. Stem 8 or 10 inches high, slender, branched above, and conspicuously bulbous at the base. Flowers pale blue or yellowish. The duration of a parasite is of necessity dependent upon that of the supporting plant, hence this species is only annual. Flowers in August and September.

## CLASS XV. TETRADYNAMIA.

THIS class is synonymous with the natural order *Cruciferae*, so named from the constant arrangement of the 4 petals in the form of a cross. The fruit is either a short pod called a Silicle, or an elongated one, Silique, by which arbitrary distinctions the 2 orders are characterized: it is generally 2-celled, with 2 valves separating from the membranous dissepiment, the thickened margin of which bears the seeds; more rarely 1-celled, without valves and indehiscent. A very important feature in the generic characters is derived from the structure of the embryo, which is always curved, but presents several modes of relative disposition between the radicle and cotyledons, which are thus expressed, ○ standing for the radicle, || or = for the cotyledons.

The cotyledons are said to be accumbent when the margins of both are turned toward the radicle ○ =.

They are styled incumbent when the radicle is applied to the back of one only ○ ||.

And the latter position is sometimes varied by the incumbent cotyledons being longitudinally folded toward the radicle, so as more or less to inclose it, when they are said to be conduplicate ○ >>.

Obscure as these features may appear on a superficial view, the difficulty is readily surmountable by a little practice, the nucleus of the seed in all of the Cruciferous plants consisting



solely of the embryo, and a simple section showing in most instances the character required. Let the tyro once carefully dissect the seeds of the Wallflower, the common Rocket, and the Mustard, and he will be at no loss to recognize the above symbols, or to apply his knowledge of the characters they express in the investigation of any other British genus of the class.

No natural group throughout the vegetable kingdom is more remarkable for uniformity of properties than this. Not a single instance is known of a poisonous species: the acridity which is met with in greater or less degree throughout all the plants of the class, is not associated with any deleterious principle; hence where sufficiently succulent and palatable they are employed as food, and even the most acrid form agreeable condiments. They are generally regarded as antiscorbutic. Their seeds yield by expression a quantity of fixed oil, employed for various œconomical purposes. The principle called azote or nitrogen, so rare in vegetables that its absence was once accounted a leading distinction between them and animals, abounds in most of the *Cruciferae*: hence the peculiar fetid scent given out by the cabbage, turnip, and others during decomposition.

## ORDER I. SILICULOSA.

### GENUS CCCXXXV. CAKILE. *Sea-Rocket*.

GEN. CHAR. *Silicle* angular, compressed, with 2 indehiscent joints; the upper joint deciduous. *Seeds* solitary in each joint; that of the upper one erect, of the lower one (sometimes abortive) pendulous. *Cotyledons* flat, accumbent.

Succulent herbs with purple or white flowers. Annual.

#### CAKILE MARITIMA. *Common Sea-Rocket*. TAB. 891.

Leaves fleshy, pinnatifid, somewhat toothed. Joints of the silicle smooth, 2-edged; the upper one arrow-shaped.

Bunias Cakile, *Linn. E. B.* 231. Cakile maritima, *Smith* III. 183. *Lindley* 28. *Hooker ed.* 2. 293. *ed.* 3. 297.

A common plant on sandy sea-shores, flowering from June to September, and very ornamental. Stem very much branched and bushy; the branches spreading, sinuous, or zigzag. Leaves alternate, the segments obtuse; smooth, as is the whole plant, and somewhat glaucous. Flowers in corymbus-like racemes, purple, sometimes white.

GENUS CCCXXXVI. CRAMBE. *Kale*.

GEN. CHAR. *Silicle* coriaceous, 2-jointed; the upper joint globose, indehiscent, deciduous, 1-seeded; the lower joint abortive, resembling a short pedicle. *Cotyledons* conduplicate.

Annual or perennial herbs, or under shrubs, with white flowers.

CRAMBE MARITIMA. *Sea Kale*. TAB. 892.

Leaves roundish, sinuated, waved, toothed, glaucous, very smooth, as well as the stem. Longer filaments forked.

*Crambe maritima*, *E. B.* 924. *Smith* III. 184. *Lindley* 34. *Hooker ed.* 2. 293. *ed.* 3. 297.

Abundant on sandy or stony sea-shores in several parts of the kingdom, but rather a local than common plant. The root or underground stem is thick and fleshy, sending up many smooth, succulent, spreading branches, which terminate in large, showy panicles of white flowers. Leaves large, petiolate, alternate, oblong or roundish, and variously waved and toothed. Whole herb very smooth and glaucous. This highly ornamental plant is well known in garden culture, the young shoots, which sprout forth very early in the spring, being when blanched scarcely inferior to *Asparagus* as a vegetable, and very nutritious. Flowers in June. Perennial.

GENUS CCCXXXVII. CORONOPUS. *Wart-cress*.

GEN. CHAR. *Silicle* double, compressed, bilocular, indehiscent. *Seeds* 1 in each cell. *Cotyledons* flat, linear, incumbent.

Annual weeds, with pinnatifid, alternate leaves, and inconspicuous white flowers growing in racemes generally opposite to the leaves.

CORONOPUS RUELLII. *Common Wart-cress*. *Swine's-cress*. TAB. 893.

Stems prostrate, smooth. Leaves pinnatifid; the segments mostly pectinate. *Silicle* entire, crested with little sharp points. Style prominent.

*Coronopus Ruellii*, *E. B.* 1660. *Lindley* 30. *Hooker ed.* 2. 294. *ed.* 3. 297. *Senebiera Coronopus*, *DeCand.* *Smith* III. 179. *Cochlearia Coronopus*, *Linn.*

A very frequent plant on waste ground, by road-sides, and among rubbish, throughout England, but, as Dr. Hooker informs us, rare in Scotland, unless in the vicinity of Edinburgh. Stems quite prostrate,



branched, and spreading in a circular manner from the root. Leaves bipinnatifid, with linear segments. Racemes very short and corymbose when in flower, elongating as the fruit enlarges. Silicle compressed, laterally dilated; transversely plaited, the plaits extended into little marginal teeth forming a very curious crest; its summit entire, crowned with the short style. Flowers from June to September.

**CORONOPUS DIDYMA.** *Lesser Wart-cress.* TAB. 894.

Stems procumbent, hairy. Leaves pinnatifid. Silicle cloven, of 2 roundish, wrinkled lobes. Style very short.

*Lepidium didymum*, Linn. *E. B.* 248. *Senebiera pinnatifida*, DeCand. *S. didyma*, Smith III. 180. *Coronopus didyma*, Lindley 30. *Hooker ed.* 2. 294. *ed.* 3. 298.

Found only on waste ground near the sea in the south and southwest of England, Wales, and the south of Ireland. Stems alternately branched. Leaves with the segments more or less notched on the upper margin, but not pectinated as in the foregoing species. Racemes many-flowered. Flowers minute, often only diandrous or at most tetrandrous. Silicles very distinctly lobed, wrinkled, but not crested. Flowers about July and August.

GENUS CCCXXXVIII. ISATIS. *Woad.*

GEN. CHAR. *Silicle* elliptical, 1-celled, 1-seeded, laterally compressed; the valves keeled, eventually separating. *Seed* pendulous, oblong. *Cotyledons* incumbent.

Caulescent annual or biennial, rarely perennial, herbs, with alternate, entire leaves and yellow flowers. Natives of Europe and Asia.

**ISATIS TINCTORIA.** *Dyer's Woad.* TAB. 895.

Radical leaves oblong, crenate, petiolate; those of the stem acutely sagittate, sessile. Silicle linear-oblong, obtuse, smooth.

*Isatis tinctoria*, *E. B.* 97. *Smith* III. 182. *Lindley* 32. *Hooker ed.* 2. 294. *ed.* 3. 298. *Glastum sativum*, Ray, *Syn.* 307.

Occasionally met with on balks, hedge-banks, and the borders of fields in several parts of the kingdom, having been formerly much cultivated as a dye. Glastonbury in Somersetshire is said to have received its name from the fields of Woad (originally called *Glastum* from the Celtic, *glas*, blue) in its vicinity. Prior to the introduction of indigo, the dye obtained by fermentation from the leaves of this plant was the staple blue of the European dyers, and prejudice long upheld the interest of its cultivators against the substitution of its more brilliant foreign rival. It is supposed to be the plant with which the ancient Britons are said to have stained their bodies. Stem 2 to

3 feet high. Leaves succulent. Flowers small, golden yellow, terminating the stem in a branched panicle. Silicle dark-brown, thrice as long as it is broad. Biennial. Flowers in July.

GENUS CCCXXXIX. VELLA. *Cress-Rocket.*

GEN. CHAR. *Silicle* elliptical, terminating in a dilated, flat, ovate, winged style, twice as long as the valves. *Cotyledons* conduplicate.

Natives of southern Europe. The most marked feature of the genus is the foliaceous style. Not more than 2 or 3 species are known, and these according to some botanists form so many distinct genera. Flowers yellow or white.

VELLA ANNUA. *Annual Cress-Rocket.* TAB. 896.

Leaves bipinnatifid. Fruit pendulous.

*Vella annua*, Linn. *E. B.* 1442. *Smith* III. 156. *Hooker* ed. 2. 294. ed. 3. 298. *Carrichtera Vellæ*, *DeCand.* *Lindley* 33. *Macreight Man. Brit. Bot.* 22.

Open sandy fields and pastures are its natural habitats, but its claim to a place in the British Flora is extremely doubtful, and seems to rest only upon the authority of Ray, in whose time it was found by Mr. Lawson on Salisbury Plain, near Stonehenge. The plant varies in height and luxuriance under cultivation, and likewise in the colour of its flowers, the petals of which, however, whether yellow or white, are curiously veined with deep purple. Peduncles erect at first, curving downward as the fruit swells. Flowers in the garden about June and July. Annual.

GENUS CCCXL. THLASPI. *Penny-cress.*

GEN. CHAR. *Calyx* equal at the base. *Petals* equal, entire. *Silicle* laterally compressed, emarginate: *valves* winged at the back. *Cells* many- (rarely 2-) seeded. *Cotyledons* accumbent.

Weeds of the northern hemisphere, with inconspicuous white flowers. Our native species are but sparingly distributed.

THLASPI ARVENSE. *Penny-cress. Mithridate Mustard.* TAB. 897.

Leaves smooth, oblong, arrow-shaped, toothed. Silicle orbicular, nearly flat: wings very broad. Seeds concentrically striated.

*Thlaspi arvense*, *E. B.* 1659. *Smith* III. 171. *Lindley* 27. *Hooker* ed. 2. 294. ed. 3. 298.

Occasionally met with about cultivated fields and road-sides, in va-



rious parts of the kingdom, but far from frequent. Whole plant smooth. Stem erect, about a foot high, branched and angular in the upper part. Leaves alternate, sessile. Flowers in terminal racemes. Silicle erect, and including its dilated wings almost circular. Style in the notch, very short. Annual. Flowers in June and July.

**THLASPI PERFOLIATUM.** *Perfoliate Penny-cress.* TAB. 898.

Stem-leaves cordate, slightly toothed, sessile, clasping at the base. Silicle obcordate, style included within the notch. Seeds not striated.

*Thlaspi perfoliatum*, *E. B.* 2354. *Smith* III. 172. *Lindley* 27. *Hooker* ed. 2. 294. ed. 3. 298.

This must be regarded as a rare plant, being only met with in the limestone district of Oxfordshire, and chiefly in the stone-pits about Burford. Stem 4 to 6 inches high, usually branched from the base. Leaves glaucous; the radical ones petiolate, ovate; the cauline ones heart-shaped and stem-clasping. Racemes rather short, corymbose when in flower, which occurs in April and May. Annual.

**THLASPI ALPESTRE.** *Alpine Penny-cress.* TAB. 899.

Leaves glaucous, sagittate, slightly dentated, sessile; radical ones ovate, petiolate. Stamens as long as the petals. Silicle obovate, retuse; crowned by the exerted style.

*Thlaspi alpestre*, *E. B.* 81. *Smith* III. 172. *Lindley* 28. *Hooker* ed. 2. 295. ed. 3. 298.

Frequent on the limestone rocks of the North of England, and met with likewise in North Wales and Scotland. Root-leaves forming a tuft, from which arises a central stem, and subsequently several lateral ones, usually but not always simple. The whole herb has a glaucous hue, and is somewhat succulent. Perennial. Flowers in June and July.

**GENUS CCCXLI. CAPSELLA.** *Shepherd's Purse.*

**GEN. CHAR.** *Calyx* equal. *Petals* entire. *Silicle* laterally compressed, obcordate, cuneate at the base: valves sharply carinate on the back, but not winged. *Cells* 8- or 10-seeded. *Cotyledons* incumbent.

The only known species of this genus was long included in *Thlaspi*, from which it differs in the absence of the foliaceous border to the silicle, and more importantly in the structure of the embryo.

**CAPSELLA BURSA-PASTORIS.** *Common Shepherd's Purse.*  
TAB. 900.

*Thlaspi Bursa-Pastoris*, *Linn.* *E. B.* 1485. *Smith* III. 173. *Capsella Bursa-Pastoris*, *Lindley* 31. *Hooker* ed. 2. 295. ed. 3. 298.

One of the most common weeds in almost all soils and situations, but exceedingly variable in habit, and in the form of its leaves, which are either pinnatifid or entire according to the richness or poverty of the soil in which it vegetates. Herb generally rough, with prominent hairs. Stem from 3 or 4 inches to 1 or 2 feet high, more or less branched, or simple. Root-leaves mostly pinnatifid, the segments notched; those of the stem entire, serrated, sagittate at the base. Flowers small, white. Silicle smooth, crowned with the very short style. Seeds pendent. Annual. Flowers from March to November, and in mild winters through the year. Small birds feed on the seed-vessels and flower-buds.

GENUS CCCXLII. HUTCHINSIA. *Hutchinsia*.

GEN. CHAR. *Calyx* erect, equal. *Petals* equal, entire. *Filaments* simple. *Silicle* elliptical, entire: valves carinate at the back, wingless. *Seeds* 2 or more in each cell, pendulous. *Cotyledons* accumbent.

Herbs annual or perennial, with entire or pinnately-lobed leaves, and white or pinkish flowers. Natives of Europe and northern Asia.

HUTCHINSIA PETRÆA. *Rock Hutchinsia*. TAB. 901.

Leaves pinnate, the lobes entire. Petals the length of the calyx. Silicle obtuse at both extremities. Stigma sessile. Seeds 2 in each cell.

*Lepidium petræum*, Linn. *E. B.* 111. *Smith* III. 168. *Hutchinsia petræa*, Brown. *Lindley* 28. *Hooker* ed. 2. 295. ed. 3. 299.

This pretty little plant is met with on limestone rocks in several parts of England, though chiefly in the western counties; likewise on old walls, as about Eltham, Kent. Stems branched, spreading, 2 or 3 inches high. Leaves pinnate, with a terminal lobe, smooth. Racemes corymbus-like while in flower. Calyx and corolla spreading: petals white. Silicle oval, flat. Annual. Flowers in March and April.

GENUS CCCXLIII. TEESDALIA. *Teesdalia*.

GEN. CHAR. *Calyx* deciduous. *Petals* entire, equal or unequal. *Stamens* with a scale at the base. *Silicle* oval, depressed, emarginate at the apex: valves carinate. *Cells* 2-seeded. *Cotyledons* accumbent.

Small annual herbs with white flowers. Natives of Europe.

TEESDALIA NUDICAULIS. *Naked-stalked Teesdalia*. TAB. 902.

Petals unequal.



*Iberis nudicaulis*, Linn. *E. B.* 327. *Teesdalia nudicaulis*, Smith III. 170. *Hooker ed.* 2. 295. *ed.* 3. 299. *T. Iberis*, *De Cand.* *Lindley* 28. *Macreight, Man. Brit. Bot.* 18.

Not unfrequent on sandy or gravelly banks, heaths, and pastures. Stems simple, 2 to 4 inches high, naked, or with 1 or 2 minute, entire, rarely cut leaves. Radical leaves lyrato-pinnatifid, spreading in a circle close to the ground. Raceme corymbiform when in flower. Two outer petals twice as long as the inner. Stamens with a small petal-like appendage at the base. Annual. Flowers in May and June.

GENUS CCCXLIV. IBERIS. *Candy-tuft.*

GEN. CHAR. *Calyx* equal at the base. *Petals* unequal, 2 exterior ones larger. *Silicle* much depressed, emarginate: valves carinate, winged. *Cells* 1-seeded. *Seeds* ovate, pendulous. *Cotyledons* accumbent.

Annual herbs or evergreen under-shrubs, with ornamental white or purple flowers: chiefly indigenous to southern Europe and the adjoining countries of Asia bordering upon the basin of the Mediterranean. Many of the species are cultivated for their beauty as hardy garden plants, especially *I. sempervirens*, *I. umbellata*, and *I. amara*. The flavour of some is intensely bitter, but it does not appear to have recommended them at any period to medicinal purposes.

IBERIS AMARA. *Bitter Candy-tuft.* TAB. 903.

Stem herbaceous. Leaves lanceolate, acute, somewhat toothed, smooth. Flowers racemose.

*Iberis amara*, *E. B.* 52. *Smith* III. 181. *Lindley* 28. *Hooker ed.* 2. 295. *ed.* 3. 299.

Common in chalky fields in some parts of Oxfordshire and Berkshire, but rare elsewhere, and probably a wanderer from the garden. Stem with spreading branches, 6 inches to a foot in height. Leaves alternate, very variable in breadth and toothing. Flowers very conspicuous, owing to the pure white of the petals; hence their introduction to the parterre, where they are often seen in contrast with the purple *I. umbellata*. Annual. Flowers in July.

GENUS CCCXLV. LEPIDIUM. *Pepper-wort.*

GEN. CHAR. *Petals* equal. *Silicle* ovate or cordate; valves carinate. *Seeds* 1 in each cell, pendulous. *Cotyledons* incumbent, rarely accumbent.

Annual or perennial herbs, or under-shrubs, distributed over various parts of the globe, where from their pungent fla-

vous they are frequently employed as salads and condiments. The juice of *L. Piscidium* is used by the natives of the Society Islands for stupifying fish and rendering their capture more easy. *L. sativum*, a native of Persia, is well known as the common Garden-Cress; and *L. oleraceum* is cultivated in New Zealand as a pot-herb. The flowers of all the species are white, small, and inconspicuous.

LEPIDIDIUM LATIFOLIUM. *Broad-leaved Pepper-wort.* TAB. 904.

Leaves ovato-lanceolate, undivided, serrated. Silicle oval, entire. *Lepidium latifolium*, *E. B.* 182. *Smith* III. 165. *Lindley* 31. *Hooker* ed. 2. 296. ed. 3. 299.

It inhabits salt-marshes and wet shady places near the sea, in several parts of the kingdom, chiefly along the eastern coast. Stem erect, 2 or 3 feet high, branched, round, smooth, paniced at the top, with numerous little racemes of small white flowers. Leaves large, alternate, attenuated toward the base and summit, serrated in the middle, glaucous. Herb very acrid and pungent; it was formerly used at table in the way of Horse-radish, and is still occasionally employed as a pot-herb; hence its provincial name, "Poor man's Pepper." An infusion is said by Dr. Withering to be emetic. Perennial. Flowers in July.

LEPIDIDIUM RUDERALE. *Narrow-leaved Pepper-wort.* TAB. 905.

Lower leaves pinnatifid; upper ones linear, entire. Flowers without petals; diandrous. Silicle notched.

*Lepidium ruderale*, *E. B.* 1595. *Smith* III. 165. *Hooker* ed. 2. 296. ed. 3. 300. *Lindley* 31.

Chiefly met with on waste ground near the sea, where the soil is muddy, or among calcareous rubbish. Variable in luxuriance, often a foot high, with a branched, round, hoary stem. Leaves alternate, smooth, rather fleshy, glaucous. Flowers terminating the branches in racemes, very small; the calyx white-edged. Herb fetid and pungent. Flowers in June. Annual.

LEPIDIDIUM CAMPESTRE. *Common Mithridate Pepper-wort.* TAB. 906.

Stem-leaves arrow-shaped, toothed. Silicle roundish, emarginate, winged at the upper part; rough with minute scales. Style very short.

*Thlaspi campestre*, *Linn.* *E. B.* 1385. *Lepidium campestre*, *Smith* III. 166. *Lindley* 31. *Hooker* ed. 2. 296. ed. 3. 300.

Not an uncommon plant on the borders of corn-fields, and on cultivated ground generally, where the soil is dry and gravelly. Stem solitary, branched above, round, 10 inches to a foot in height. Lower leaves spathulate, tapering into a footstalk; upper ones sharply sagittate, sessile. Flowers small, white, in terminal racemes. The



little, glossy scales with which the silicle is beset, and the shortness of the style, distinguish this species from the following. Herb hoary with a short pubescence. Annual. Flowers in July.

LEPIDIDIUM SMITHII. *Smooth-fruited Field Pepper-wort.* TAB. 907.

Stem-leaves arrow-shaped, toothed. Silicle oblong, emarginate, winged, mostly smooth. Style exserted far beyond the notch.

*Thlaspi hirtum*, *E. B.* 1803. (not of *Linn.*) *Lepidium hirtum*, *Smith* III. 167. *Lindley* 31. *L. Smithii*, *Hooker ed.* 2. 296. *ed.* 3. 300. *Macreight Man. Brit. Bot.* 21.

Borders of fields, balks, and hedges in Norfolk and Suffolk, frequently present this equivocal species, but it seems at least rare in other parts of England. In Scotland Dr. Hooker informs us it is plentiful, and it has been found in North Wales and Ireland. Whole herb clothed with a hoary pubescence. Stems sometimes several from the same root, 6 or 8 inches high. Silicle mostly smooth, but occasionally hairy or even scaly, though in a less degree than that of *L. campestre*, which this plant resembles very closely. The greater length of the style is but an uncertain character of distinction in the eye of the vegetable morphologist; and the biennial or perennial habit, even admitting it to be the latter, loses much of its importance, when the contingences which limit or extend the duration of other plants similarly circumstanced are taken into consideration. These observations are made with deference, but they are founded upon careful comparison of the two plants in question, and a long experience of the effects produced by difference of soil and aspect upon the proportions and development of the reproductive organs. Perennial. Flowers in June and July.

LEPIDIDIUM DRABA. *Whitlow Pepper-wort.* TAB. 907\*.

Leaves amplexicaul, broadly oblong or lanceolate, entire or toothed.

Silicle cordate, crowned with a style about its own length.

*Lepidium Draba*, *E. B. Supp.* 2683. *Hooker ed.* 2. 296. *ed.* 3. 299. *Macreight Man. Brit. Bot.* 21. *Cochlearia Draba*, *Linn.*

Rare, and as suggested by Dr. Hooker, in the "Supplement to English Botany," probably introduced with agricultural seeds from the continent. Stem 8 to 12 inches high, branched. Leaves distant, the lower ones stalked, the upper sessile and cordate at the base. Perennial. Flowers in June.

GENUS CCCXLVI. COCHLEARIA. *Scurvy-grass.*

GEN. CHAR. *Calyx* patent, the segments concave. *Petals* entire, obovate. *Filaments* simple. *Silicle* globose or ovate: valves turgid. *Cells* many-seeded (rarely 2-seeded). *Seeds* not bordered. *Cotyledons* accumbent.

Annual or perennial herbs with, generally, fleshy leaves and white flowers. Chiefly distributed in alpine or maritime districts over Europe and northern Asia.

**COCHLEARIA OFFICINALIS.** *Common Scurvy-grass.* TAB. 908.

Radical leaves roundish, nearly entire, petiolate : cauline ones sessile, oblong, sinuated and toothed. Silicle globose.

*Cochlearia officinalis*, *E. B.* 551. *Smith* III. 174. *Lindley* 27. *Hooker ed.* 2. 297. *ed.* 3. 300.

Abundant on the sea-coast in muddy situations and among the rocks, also in elevated alpine districts in the interior, but varying greatly in size and luxuriance. Herb smooth and rather succulent. Stems angular, branched. Cauline leaves half embracing the stem, always more or less toothed. This species was once in high repute as an antiscorbutic, hence the popular name ; but, like many other remedies of the olden time, its virtues were greatly overrated. The leaves are sometimes eaten as salad, but they are far less grateful than those of the Water-cress, and are not much superior in their alterative effects. Annual. Flowers in May and June.

**COCHLEARIA GRÆNLANDICA.** *Greenland Scurvy-grass.* TAB. 909.

Leaves kidney-shaped or cordate, fleshy, entire ; upper ones ovate or oblong. Silicle globose.

*Cochlearia Grænlantica*, *E. B.* 2403. *Smith* III. 175. *Lindley* 27. *Hooker ed.* 2. 297. *ed.* 3. 301. *C. officinalis*, var. *Hooker Fl. Scot.* 1. 195.

Met with occasionally on the sea-shore, more frequently on the Highland mountains. So nearly resembling the preceding species, that it is very doubtful whether it be distinct, or a mere dwarfed variety. Petals white, with a purple tinge. Flowers in June and July. Annual.

**COCHLEARIA ANGLICA.** *English Scurvy-grass.* TAB. 910.

Radical leaves ovate or cordate, entire, petiolate ; those of the stem lanceolate, toothed, mostly sessile. Silicle elliptical, strongly reticulated with veins.

*Cochlearia Anglica*, *E. B.* 552. *Smith* III. 176. *Lindley* 27. *Hooker ed.* 2. 297. *ed.* 3. 301.

Frequent on muddy sea-shores, and on the margins of tide rivers, and like other maritime plants met with likewise on the rocky summits of mountains. The oval figure of the curiously veined silicle distinguishes this at once from the two preceding ; the foliage is too variable in all of the annual or biennial species of *Cochlearia* to admit of much dependence being placed upon the characters it presents. Annual. Its lively white flowers are conspicuous in May and June.



COCHLEARIA DANICA. *Danish Scurvy-grass.* TAB. 911.

Leaves all triangular, petiolate. Silicles elliptical, reticulated with veins.

*Cochlearia Danica*, *E. B.* 696. *Smith* III. 177. *Lindley* 27. *Hooker* ed. 2. 297. ed. 3. 301.

Common on the sea-coast and in salt marshes. A small species with spreading stems, and trilobate, ivy-like leaves, all of which are petiolate. Flowers and silicles much less than those of *C. Anglica*, and the habit of the plants altogether different. Annual. Flowers in May and June.

COCHLEARIA ARMORACIA. *Horse-radish.* TAB. 912.

Radical leaves oblong, wrinkled, crenate, on long footstalks; those of the stem lanceolate, serrate or entire. Silicle oblong; stigma dilated, nearly sessile.

*Cochlearia Armoracia*, *E. B.* 2323. *Smith* III. 177. *Lindley* 27. *Hooker* ed. 2. 297. ed. 3. 301.

The root of this plant is so well known as the condiment to our national dish, that it is scarcely possible to think of roast-beef without the Horse-radish following as a matter of course; but however inseparable from or indigenous with the popular character of Englishmen and English habits may be the former, there is much cause to doubt whether the latter can lay any claim to hereditary connexion with the soil, even so far back as the establishment of our Saxon ancestors. We probably owe its introduction to the same source with many other of the continental luxuries of our gardens, viz. the foundation of monastic institutions. It is met with in various places as the outcast of gardens, especially where the soil is deep and moist; but whether obviously so on the banks of the Thames, or more truly wild in the mountain moors of the northern counties, it still so far retains the character of an imperfectly naturalized plant, as rarely to ripen its fruit. Stems 2 to 3 feet high. Radical leaves very large, sometimes pinnatifid, especially at the lower part. Flowers numerous, very small, white, in terminal and axillary racemes; they come out in May and June. Perennial. A troublesome weed where once established.

GENUS CCCXLVII. SUBULARIA. *Awl-wort.*

GEN. CHAR. *Silicle* oval, pointless: valves turgid. *Cells* 4-seeded. *Cotyledons* incumbent, linear, curved.

Only one species is known, which somewhat resembles *Draba* in the inflorescence, but differs from it in the curvature of the embryo.

SUBULARIA AQUATICA. *Awl-wort.* TAB. 913.

*Subularia aquatica*, *E. B.* 732. *Smith* III. 157. *Lindley* 34. *Hooker* ed. 2. 298. ed. 3. 301.

This little plant is frequent near the margins of alpine lakes, especially in Scotland and Ireland, and is often wholly submersed, even during the flowering season. Root annual, consisting of many long, simple fibres. Leaves few, all radical, awl-shaped with a recurved point, 1 to 3 inches long. Scape 2 or 3 inches high; bearing a few minute white flowers, the petals of which seem not to expand when the inflorescence takes place under water. Flowers in July.

GENUS CCCXLVIII. DRABA. *Whitlow-grass.*

GEN. CHAR. *Calyx* equal. *Petals* mostly entire, or scarcely emarginate. *Filaments* simple. *Silicle* entire, oval or oblong: valves plane or slightly convex. *Seeds* numerous, not margined. *Cotyledons* accumbent.

Herbaceous plants of the northern hemisphere, chiefly in high latitudes and alpine districts. Flowers yellow or white.

\* *Petals* deeply cloven.

DRABA VERNA. *Common Whitlow-grass.* TAB. 914.

Leaves lanceolate, hairy, slightly toothed. Scapes naked. Petals deeply cloven.

*Draba verna*, *E. B.* 586. *Smith* III. 158. *Hooker* ed. 2. 298. ed. 3. 302. *Erophila vulgaris*, *DeCand.* *Lindley* 26. *Macreight Man. Brit. Bot.* 17.

One of the earliest of our spring flowers, and abundant everywhere on the tops of walls, dry banks, and barren pastures. Leaves all radical, toothed toward the apex, rarely entire. Scapes 2 to 4 inches high, terminating in a zigzag raceme, which is corymbiform when in flower. Calyx spreading. Petals white, cloven about half-way down. Silicle flat (inflated in a variety mentioned by Hooker). Annual. Flowers in March and April, and withers away soon after the seed is scattered: the dry scapes supporting the membranous dissepiments of the silicles remaining, however, nearly through the summer.

\*\* *Petals* entire, or only subemarginate.

DRABA AIZOIDES. *Yellow alpine Whitlow-grass.* TAB. 915.

Leaves tufted, lanceolate, rigid, keeled, strongly ciliated. Flower-stalks terminal, naked; raceme corymbiform. Petals slightly notched, twice the length of the calyx. Silicle with a long style.

*Draba aizoides*, *E. B.* 1271. *Smith* III. 158. *Lindley* 26. *Hooker* ed. 2. 298. ed. 3. 302.

This beautiful little rock-plant is met with wild on walls and rocks near Swansea, South Wales. Plant branched from the root, forming dense, moss-like tufts. Leaves crowded in round clusters; they are linear-lanceolate, very rigid, glossy, keeled on the under side, and



regularly ciliated on the margin with white shining bristles. Flower-stalks 1 to 2 inches high, smooth; springing from the centre or apex of the tuft of leaves terminating each branch, and ending in an abbreviated raceme or corymbus of bright yellow flowers. Silicle flat, elliptical, acute, crowned with a longish style. Perennial. Flowers in March and April. The rich golden hue of the petals, and the remarkably fringed evergreen leaves, render it an interesting ornament to the alpine garden, fancy rock-work, or ruin.

**DRABA RUPESTRIS.** *Rock Whitlow-grass.* TAB. 916.

Leaves in radical tufts, plane, lanceolate, obscurely toothed, hairy. Flower-stems (mostly) naked. Petals entire. Silicle oblong-oval, tipped with the short style.

*Draba hirta*, *E. B.* 1338. *Smith* III. 159. (not of Linn.)? *Draba rupestris*, *Brown.* *Lindley* 26. *Hooker* ed. 2. 298. ed. 3. 302. *Macreight Man. Brit. Bot.* 17.

A rare inhabitant of the summits of the Highland mountains in Scotland. Somewhat resembling *D. aizoides* in habit, but the leaves are very dissimilar, more spreading, and less conspicuously fringed. Whole plant pubescent, the hairs mostly simple, but sometimes forked or even stellated. Flower-stalks 1 to 2 inches high. Petals white. Perennial. Flowers in May and June.

**DRABA INCANA.** *Twisted-podded Whitlow-grass.* TAB. 917.

Stem-leaves lanceolate, toothed, hoary with a close starry pubescence. Silicles oblong, obliquely twisted; longer than the pedicles.

*Draba incana*, *E. B.* 388. *Smith* III. 160. *Lindley* 26. *Hooker* ed. 2. 299. ed. 3. 302. *D. contorta*, *DeCand.* *Macreight Man. Brit. Bot.* 17.

Grows on limestone rocks in the mountainous districts of the north of England, Wales, and Scotland, varying greatly in aspect according to situation: our figure represents a more luxuriant form than that under which it usually occurs. According to Professor Hooker, "small starved specimens, with only 1 or 2 leaves on the stem, come very near *D. rupestris*." Stem from a few inches to more than a foot in height; in the taller plants branched alternately. Radical leaves forming a tuft, often entire; cauline ones always toothed very deeply, or even laciniated. Flowers small, white. Silicles curiously twisted. Biennial or annual. Flowers in May and June.

**DRABA MURALIS.** *Speedwell-leaved Whitlow-grass.* TAB. 918.

Stem branched. Leaves cordate, toothed, hairy. Silicles elliptical, obtuse, flat; shorter than the pedicles.

*Draba muralis*, *E. B.* 912. *Smith* III. 161. *Lindley* 26. *Hooker* ed. 2. 299. ed. 3. 303.

Wild on limestone rocks and mountains in several parts of the kingdom. Sometimes met with on walls in the vicinity of botanic gardens. Herb pubescent, the hairs generally branched or stellate.

Stem 6 inches to a foot high. Leaves rather obtusely heart-shaped ; the uppermost ovate and amplexicaul. Flowers small, white. Silicle blunt, smooth. Annual. Flowers in April and May.

GENUS CCCXLIX. KONIGA. *Koniga*.

GEN. CHAR. *Calyx* spreading. *Petals* entire. *Filaments* simple. *Hypogynous glands* 8. *Silicle* subovate: valves nearly plane. *Cells* one-seeded; *seed-stalks* with their base adhering to the dissepiment. *Seeds* usually margined. *Cotyledons* accumbent.

The genus probably consists of a single species only, a native of the sea-shores of Southern Europe.

KONIGA MARITIMA. *Sea-side Koniga*. *Sweet Alyssum*. TAB. 919.

*Alyssum maritimum*, *E. B.* 1729. *Smith* III. 162. *Macreight Man. Brit. Bot.* 17. *A. minimum*, *Linn.* *A. halamifolium*, *Bot. Mag.* *Glyce Maritima*, *Lindley* 26. *Clypeola maritima*, *Linn.* *Koniga maritima*, *Brown.* *Hooker ed.* 2. 299. *ed.* 3. 303.

This well-known garden plant, whose synonyms have been so multiplied and confused that we are at a loss to select, is naturalized on cliffs and stony places near the sea in several parts of our island, as near Aberdeen in Scotland, Devonshire, and Mount's Bay, Cornwall. Though generally treated as an annual under cultivation, it is really suffruticose, the branched, spreading stem being woody and perennial at the lower part. Leaves alternate, linear-lanceolate, hoary with close-pressed, silvery hairs, which are mostly forked. Flowers white, in long close racemes; very fragrant: they continue to bloom from July to September.

GENUS CCCL. CAMELINA. *Gold of Pleasure*.

GEN. CHAR. *Filaments* simple. *Silicle* subovate: valves ventricose, dehiscing with part of the style. *Cells* many-seeded. *Seeds* not margined.

European herbs with small yellow flowers, which are too inconspicuous to warrant the pompous English name of the naturalized species. The seeds contain a large proportion of fixed oil.

CAMELINA SATIVA. *Common Gold of Pleasure*. TAB. 920.

Leaves lanceolate, sagittate at the base. *Silicle* obovate, margined. Style conic. Stigma simple.

*Alyssum sativum*, *E. B.* 1254. *Camelina sativa*, *Smith* III. 164.



*Lindley* 30. *Hooker* ed. 2. 299. ed. 3. 303. *Myagrum sativum* Linn.

Occasionally met with in cultivated fields, especially among flax, with the seeds of which it is probably imported. In Germany and some other parts of Europe it is cultivated for the sake of the oil, which is expressed from its seeds and used by the inhabitants for various economical purposes. Stem erect, round, leafy, 2 or 3 feet high; paniced above. Leaves lance-arrow-shaped, nearly entire, the angles acute. Flowers very small. Silicles comparatively large, on long stalks. Seeds pendulous from the margin of the septum. Annual. Flowers about June or July.

## ORDER II. SILIQUOSA.

### GENUS CCCLI. DENTARIA. *Coral-root.*

GEN. CHAR. *Siliques* narrow-lanceolate, tapering: valves flat, ribless, generally separating elastically. *Seed-stalks* broad. *Seeds* ovate, not bordered, in one row. *Cotyledons* accumbent.

An elegant genus of perennial herbs, natives chiefly of Europe and North America. They have fleshy, tuberous or toothed surculi (underground or radical stems), compound or divided petiolate leaves, and showy purple, rarely yellow or white, flowers. Their flavour is pungent, and *D. diphylla* is used as a condiment instead of mustard in the United States, where it is known by the name of Pepper-root.

### DENTARIA BULBIFERA. *Bulbiferous Coral-root.* TAB. 921.

Stem simple. Lower leaves pinnated; upper ones simple, with axillary bulbs.

*Dentaria bulbifera*, *E.B.* 309. *Smith* III. 186. *Lindley* 25. *Hooker* ed. 2. 300. ed. 3. 303.

A rare inhabitant of woods and shady places, though from its creeping and bulb-bearing habit soon becoming abundant where once established. The surculi spread horizontally, bearing many thick fleshy scales or tooth-like processes, whence the generic name. Stems erect, terminating the branches of the surculus, 1 to 2 feet high, naked in the lower part, leafy from the middle upwards. Leaves alternate, the 2 or 3 lowermost pinnate, with 5 lanceolate, more or less serrated leaflets; the uppermost simple: mostly bearing an oval, scaly, dark purple bulb in their axils, which drops off eventually, and vegetates to propagate the plant, whose seed is rarely matured. These bulbs are analogous to the branches of the radical stem or surculus, whose scales represent undeveloped leaves bearing those branches in their axils. Flowers nearly as large as those of the common Garden-

Stock, reddish-purple; they appear in April and May. An ornamental plant; but, like the rest of its genus requiring a peculiar soil, rarely seen in cultivation, unless in the botanic garden.

GENUS CCCLII. CARDAMINE. *Lady's Smock.*

*Bitter-cress.*

GEN. CHAR. *Silique* linear: valves flat, ribless, generally separating elastically. *Seed-stalks* slender. *Seeds* ovate, not bordered. *Cotyledons* accumbent.

Herbs of temperate climates, chiefly found in the northern hemisphere, and either alpine, or inhabiting marshy situations. Leaves rarely entire or simply lobate, mostly pinnated. Flowers generally white, or pale purple. Flavour pungent; they may be eaten as salad; and some species have the repute of being diuretic and antiscorbutic, but the dose must be large and frequently renewed to produce any very sensible effect.

\* *Leaves simple.*

CARDAMINE BELLIDIFOLIA. *Daisy-leaved Lady's Smock.*

TAB. 922.

Leaves simple, ovate, entire; on rather long petioles.

*Cardamine bellidifolia*, *E. B.* 2355. *Smith* III. 187. *Lindley* 25. *Hooker* ed. 2. 301. ed. 3. 304.

A very doubtful native. Introduced to our Flora by Dr. Withering, on the authority of specimens sent to him from Scotland by Mr. Milne, formerly curator of the Oxford Botanic Garden. It is said likewise to have been found more recently in the county of Clare, Ireland. On the Alps of Switzerland and Savoy this pretty species of *Cardamine* is met with abundantly upon the margins of mountain-rills, and in the moist crevices of the rocks. Whole plant smooth. Stems tufted, seldom more than 2 inches high, naked, or with 1 or 2 leaves. Leaves ovate, tapering into the usually very long foot-stalk; the margin slightly waved, but never notched. Flowers small, forming a terminal corymbus. Petals erect, white; twice as long as the calyx. *Silique* linear, obtuse, transversely wrinkled. Perennial. Flowers from July to September.

\*\* *Leaves pinnate.*

CARDAMINE IMPATIENS. *Narrow-leaved Bitter-cress.* TAB. 923.

Leaves pinnate; leaflets lanceolate, mostly cut. Stipules ciliated. Petals linear, often wanting.

*Cardamine impatiens*, *E. B.* 80. *Smith* III. 187. *Lindley* 25. *Hooker* ed. 2. 300. ed. 3. 304.



Moist, shady, rocky places in Derbyshire, Westmoreland, and Cumberland present this species, which, though occasionally found, is very rare in other parts of the kingdom. Stem erect, angular, hollow, branched, from 12 to 18 inches high. Leaves pale green, smooth; the lobes for the most part irregularly cut and notched. Stipules narrow, acute, finely ciliated. Flowers very minute; the petals white, but generally wanting. Valves of the silique recurving upwards and scattering the seeds with great force when touched, whence the specific name. Annual. Flowers in May and June.

**CARDAMINE HIRSUTA.** *Hairy Bitter-Cress.* TAB. 924.

Leaves pinnate, without stipules: leaflets petiolate, roundish or oblong, notched.

*Cardamine hirsuta*, *E. B.* 492. *Smith* III. 188. *Lindley* 25. *Hooker ed.* 2. 300. *ed.* 3. 304.

Moist and rather shaded spots seem its natural habitats, but it is capable of accommodating itself to all soils and situations, and like other plants similarly circumstanced is exceedingly variable in appearance. Stems 2 or 3 inches to a foot high, simple or branched, angular. Leaves pinnated; the pinnæ of the lower ones roundish oval, those of the upper lanceolate; all more or less notched or toothed, and distinctly petiolate. No stipules. Flowers small, white. Two of the stamens often abortive. Herb generally hairy, but not always so much so as to warrant the specific name. Annual or biennial. Flowers from March to June.

**CARDAMINE PRATENSIS.** *Common Lady's Smock.* TAB. 925.

Leaves pinnate, without stipules: leaflets of the radical leaves roundish and toothed; those of the cauline ones linear-lanceolate, entire.

Petals with a tooth on the claw. Style straight. Stigma capitate. (Anthers yellow.)

*Cardamine pratensis*, *E. B.* 776. *Smith* III. 189. *Lindley* 25. *Hooker ed.* 2. 300. *ed.* 3. 304.

Few of our native plants are better known than this, which proclaims in almost every moist mead and pasture the presence of the most joyous month throughout the year. Stem simple, about a foot high. Leaves pinnate; the leaflets of the radical ones roundish or heart-shaped, more or less angled or toothed, and on short petioles; those of the upper or stem-leaves generally entire or but sparingly notched, lanceolate or linear, tapering at the base, sessile. Inflorescence corymbose at first, afterwards lengthening into a raceme. The large, pale lilac or blush-coloured flowers look white in the distance, and where growing profusely resemble linen laid to bleach, hence the vulgar name. Herb smooth. The leaflets are sometimes proli-ferous, rooting where they come in contact with the soil, and producing new plants: this is not unfrequently the case with a double-flowered and therefore seedless variety cultivated in the flower-garden. Perennial. Flowers in May. The flowering tops have been recom-

mended in hysteria and epilepsy, but their efficacy is very doubtful. The herb may be used as salad, but it is less grateful than the Watercress, *Nasturtium officinale*.

CARDAMINE AMARA. *Bitter-Cress. Bitter Lady's Smock.*  
TAB. 926.

Stem rooting at the base. Leaves pinnate, without stipules; leaflets of the lowermost roundish; of the rest toothed and angular.

Style oblique. Stigma rather acute. (Anthers purple.)

*Cardamine amara*, *E. B.* 1000. *Smith* III. 190. *Lindley* 25. *Hooker* ed. 2. 300. ed. 3. 304.

Less frequent than the last, but far from being uncommon as it was once considered. In habit it is more aquatic than *C. pratensis*, seldom intruding into the open meadow unless the soil be swampy, but preferring the margins of brooks, pools, and ditches. A careless botanist would be apt to confound the two, but the broad and deeply toothed leaflets of the upper leaves, the yellowish, rather than purple hue of the large petals, and the deep violet colour of the anthers, distinguish this species at a glance. Perennial. Flowers in April and May.

GENUS CCCLIII. ARABIS. *Rock-Cress. Wall-Cress.*

GEN. CHAR. *Calyx* erect. *Silique* linear, crowned with the subsessile stigma: valves flat, veined, with a linear septum. *Seeds* in one row. *Cotyledons* flat, accumbent.

Herbs of the northern hemisphere, chiefly attached to dry situations, rocks, or walls. They are seldom seen in cultivation, *A. albida*, the common White Alyssum of the gardens, excepted, though several of the species are ornamental, especially to the artificial rock and ruin. Flowers white, very rarely yellowish or purple.

ARABIS STRICTA. *Bristol Rock-Cress.* TAB. 927.

Stems hairy. Leaves toothed, obtuse, hispid; radical ones somewhat lyrate. Petals and siliques erect.

*Arabis stricta*, *E. B.* 614. *Smith* III. 210. *Lindley* 24. *Hooker* ed. 2. 301. ed. 3. 304.

A rare plant, being only met with on St. Vincent's Rocks and a few other places in the neighbourhood of Bristol. Stems several, a little branched, leafy, about 6 inches high. Leaves very deeply toothed or gashed, rough with hairs, of a deep, rather glossy green above, often purple beneath; those of the stem small, seldom more than 2 or 3. Flowers few, racemose. Petals cream-coloured, twice as long as the erect calyx, scarcely expanding. Perennial. Flowers in March.



ARABIS PETRÆA. *Alpine Rock-Cress.* TAB. 928.

Radical leaves hastate or lyrato-pinnatifid, stalked, tufted; those of the stem lanceolate, entire, sessile. Petals and siliques spreading. *Cardamine hastulata*, *E. B.* 469. *Arabis hispida*, *Linn. Smith III.* 211. *Lindley* 24. *A. Petræa*, *Hooker ed. 2.* 301. *ed. 3.* 305. *Macreight Man. Brit. Bot.* 15.

Frequent on moist alpine rocks in North Wales and Scotland, especially in the latter. Herb nearly smooth, sometimes hairy. Tufts branching from the crown of the root. Stems erect, slender, with a few lanceolate-scattered leaves, 4 or 5 inches high. Leaves rather fleshy. Flowers somewhat paniced. Petals purplish, patent. A pretty little species well worthy of a place in the alpine garden. Perennial. Flowers about June and July.

ARABIS CILIATA. *Fringed Rock-Cress.* TAB. 929.

Stem simple. Leaves somewhat toothed, oval, smooth on both sides, distantly fringed or ciliated; radical ones nearly sessile, obtuse; those of the stem semiamplexicaule.

*Turritis alpina*, *Linn. E. B.* 1746. *Arabis ciliata*, *Smith III.* 212. *Lindley* 24. *Hooker ed. 2.* 301. *ed. 3.* 305.

Rare; on rocks by the sea-side, Cunnamara, Ireland, and near Loch Lea, Scotland. Stems slender, with few leaves, 3 or 4 inches high. Root-leaves tufted, oblong-obovate, tapering below. Flowers small, white, in a terminal corymbus. Siliques long, linear, nearly erect. Biennial. Flowers in July.

ARABIS HIRSUTA. *Hairy Wall-Cress.* TAB. 930.

Stem rough, with simple, spreading hairs. Leaves hispid, dentate. Siliques straight; the valves slightly keeled.

*Turritis hirsuta*, *Linn. E. B.* 587. *Arabis hirsuta*, *Smith III.* 213. *Lindley* 24. *Hooker ed. 2.* 301. *ed. 3.* 305.

Rather local than frequent, but met with on rocks, walls, and dry banks in many parts of England and Scotland. Stems branched from the base, erect, round, densely set with spreading hairs except on the upper part; about a foot high; very leafy. Leaves all toothed and hairy; the radical ones rather obovate, tapering at the base; cauline ones sessile, oval-lanceolate. Flowers small, white, in terminal racemes. Siliques very numerous, erect. Biennial. Flowers in June.

ARABIS TURRITA. *Tower Wall-Cress.* TAB. 931.

Leaves toothed, stem-clasping. Bractæas foliaceous. Siliques flat, linear, recurved, the margins incrassated.

*Arabis turrita*, *E. B.* 178. *Smith III.* 214. *Lindley* 24. *Hooker ed. 2.* 301. *ed. 3.* 305.

Long naturalized on the walls of Trinity and St. John's Colleges, Cambridge, and Magdalen College, Oxford, and probably escaped

from the Botanic Gardens. Stems simple, erect, about a foot high. Leaves pale green, toothed, rather rough; the radical ones ovate, lengthened at their base into short petioles; cauline ones lanceolate, stem-clasping. Raceme terminal, leafy. Flowers pale sulphur-colour. Siliques very long, curving outwards. Biennial. Flowers in May.

GENUS CCCLIV. TURRITIS. *Tower-Mustard.*

GEN. CHAR. *Calyx* lax. *Silique* elongated, 2-edged; valves flat, nerved or keeled. *Seeds* in a double row, numerous. *Cotyledons* accumbent.

A small genus of uninteresting weeds nearly allied to *Ara-bis*. The species are caulescent annuals, with white flowers. Natives of the northern parts of both continents.

TURRITIS GLABRA. *Smooth long-podded Tower-Mustard.*

TAB. 932.

Radical leaves toothed, hairy; cauline ones entire, smooth, stem-clasping.

*Turritis glabra*, *E. B.* 777. *Smith* III. 215. *Lindley* 24. *Hooker* ed. 2. 302. ed. 3. 305.

Not unfrequent on banks and road-sides in Norfolk and Suffolk, but rare in other parts of the kingdom. Stems 1 to 3 feet high, very erect and straight, round, leafy; in the larger plants throwing out a few upright flowering branches towards the top. Root-leaves lanceolate, broadly toothed or sinuated at the lower part, rough on both sides with rigid hairs: cauline ones numerous, sessile, sagittate, acute, erect, smooth. Flowers small. Petals pale sulphur-colour, entire. Siliques very long, erect. Whole herb glaucous, especially the upper or cauline leaves. Annual. Flowers in May and June.

GENUS CCCLV. BARBAREA. *Winter-Cress.*

GEN. CHAR. *Calyx* erect. *Silique* 4-angled, somewhat 2-edged: valves concave, keeled, not pointed at the apex. *Seeds* in a single row. *Cotyledons* accumbent.

Perennial herbs with smooth leaves and yellow flowers. Some species are cultivated as salads.

BARBAREA VULGARIS. *Bitter Winter-Cress.* TAB. 933.

Lower leaves lyrate, the terminal lobe rounded; upper ones obovate, toothed; often pinnatifid at the base. Siliques linear, acuminate, rather bluntly quadrangular.

*Erysimum barbarea*, *Linn. E. B.* 443. *Barbarea vulgaris*, *Smith* III. 198. *Lindley* 23. *Hooker* ed. 2. 302. ed. 3. 306.



Common throughout the kingdom, on hedge-banks, road-sides, and waste ground, but varying greatly in luxuriance. Stem 1 to 3 feet high, angular and furrowed, generally branched, smooth and glossy. Leaves of a very dark shining green, strongly veined. Flowers in dense corymbus-like racemes. Petals bright golden-yellow. A double-flowered variety is the Yellow Rocket of the gardens. Perennial. Flowers from May to September.

**BARBAREA PRÆCOX.** *Early Winter-Cress.* TAB. 934.

Lower leaves lyrate; upper ones deeply pinnatifid, their segments linear, oblong, entire. Siliques linear, obtuse, compressed.

*Erysimum præcox*, *E. B.* 1129. *Barbarea præcox*, *Smith* III. 199. *Lindley* 23. *Hooker ed.* 2. 302. *ed.* 3. 306. *Erysimum barbarea*,  $\beta$ , *Linn.*

Found wild occasionally on the sides of ditches and in waste ground, but probably a wanderer from the kitchen garden, having long been cultivated as a spring salad. A very different plant both in flavour and habit from *B. vulgaris*. Well-charactered by its slender stems, deeply pinnatifid cauline leaves, smaller flowers, and very long siliques. Perennial. Flowers from April to October.

GENUS CCCLVI. NASTURTIUM. *Cress.*

GEN. CHAR. *Calyx* spreading, equal. *Stigma* bilobate. *Silique* nearly cylindrical (sometimes very short or silicle-like): valves concave, without veins or keel. *Cotyledons* accumbent.

Herbs of the northern hemisphere, chiefly growing in watery places, ponds, or slow streams. They have divided, sometimes pinnate leaves, and yellow or white flowers. Some exotic species are apetalous. The well-known Water-Cress is the only economical plant of its genus, the rest are regarded as mere weeds.

**NASTURTIUM OFFICINALE.** *Water Cress.* TAB. 935.

Leaves pinnate; leaflets ovate, subcordate, sinuate.

*Sisymbrium Nasturtium*, *Linn. E. B.* 855. *Nasturtium officinale*, *Smith* III. 192. *Lindley* 23. *Hooker ed.* 2. 302. *ed.* 3. 306.

Frequent in clear shallow waters. Few native plants are more generally known than this wholesome and much-esteemed salad. Stems spreading and rooting, or floating where the water is of sufficient depth, angular and branched. Leaves pinnate; the segments opposite and more or less rounded, waved and toothed, the terminal one always larger than the others, and the pinnæ decreasing in size toward the base of the leaf, giving it a somewhat lyrate appearance.

The upper surface of the leaves of the Water Cress, like those of other aquatics of similar habit, is of an oily smoothness which repels moisture, especially when the plants grow floating, their natural and most luxuriant state. Flowers small, white. Siliques spreading; recurved upwards from horizontal fruit-stalks. Perennial. Flowers in July and August.

**NASTURTIIUM SYLVESTRE.** *Creeping Cress.* TAB. 936.

Root creeping, leaves pinnate; leaflets lanceolate, cut; those of the uppermost leaves entire, linear.

*Sisymbrium sylvestre*, *Linn. E. B.* 2324. *Nasturtium sylvestre*, *Smith* III. 193. *Lindley* 23. *Hooker ed.* 2. 302. *ed.* 3. 306.

In a wet gravelly soil, and about the margins of pools, ditches and rivers this species sometimes abounds; but though frequent in the vicinity of the metropolis, it must be regarded a local plant. The creeping habit, pinnated leaves, and zigzag racemes, (the latter feature is most obvious in an advanced stage of flowering,) distinguish it at a glance from the two following. Stem erect, angular, branched, a foot or more in height. Flowers numerous, bright yellow, conspicuous: petals much longer than the calyx. Siliques short, spreading, curving a little upwards. Seeds not often matured. Perennial. Flowers in July and August.

**NASTURTIIUM TERRESTRE.** *Marsh Cress.* TAB. 937.

Root tapering. Leaves lyrato-pinnatifid, unequally toothed. Petals not longer than the calyx.

*Sisymbrium terrestre*, *E. B.* 1747. *Nasturtium terrestre*, *Smith* III. 193. *Lindley* 23. *Hooker ed.* 2. 303. *ed.* 3. 306. *N. palustre*, *DeCand. Macreight Man. Brit. Bot.* 14. *Sisymbrium amphibium*, var. *Linn.*

Similar in its habitats to *N. sylvestre*, which it often accompanies, but is perhaps more generally distributed. The great difference in their foliage, together with the small flowers and more turgid siliques of the present species, renders it impossible to confound them. Petals minute, yellow, inconspicuous. Annual. Flowers from June to September.

**NASTURTIIUM AMPHIBIUM.** *Amphibious Cress.* TAB. 938.

Root fibrous. Leaves oblong, pinnatifid or serrated. Petals longer than the calyx.

*Sisymbrium amphibium*, *Linn. E. B.* 1840. *Nasturtium amphibium*, *Smith* III. 195. *Lindley* 23. *Hooker ed.* 2. 303. *ed.* 3. 307.

A common plant in watery places, especially in rivers and ditches, growing to a much larger size than either of the preceding. In wet meadows and in shallow water the stems are erect, 2 or 3 feet high and branched: in deeper water they are often floating, throwing out pendent root-fibres from every joint like the Water Cress, the leaves which are below the surface being deeply pinnatifid, with



narrow, pectinated segments. Flowers yellow. Siliques very short, turgid when ripe, but often abortive. Perennial. Flowers from June to August.

GENUS CCCLVII. SISYMBRIUM. *Hedge-Mustard.*

GEN. CHAR. *Calyx* equal. *Silique* rounded or angular: valves concave. *Stigmas* 2, distinct or united into a capitulum. *Cotyledons* incumbent, sometimes oblique, flat.

An extensive and widely distributed genus consisting chiefly of annual or biennial herbs, some of which are found in most parts of the world, though they are most abundant in temperate regions. Leaves generally more or less divided; flowers small, yellow, very rarely white or purple. However valuable, as their numbers testify them to be, in the economy of nature, in that of man they rank as mere weeds.

SISYMBRIUM OFFICINALE. *Common Hedge-Mustard.* TAB. 939.

Stem rough with reflexed bristles. Leaves lyrate, somewhat runcinate, hairy. Siliques subulate, pubescent, close pressed to the main stalk.

*Erysimum officinale*, *Linn. E. B.* 735. *Sisymbrium officinale*, *Smith* III. 196. *Lindley* 29. *Hooker ed.* 2. 303. *ed.* 3. 307.

Very common in almost all soils and situations, and readily distinguished throughout the summer by its long spreading branches, densely set with closely-pressed siliques, and terminating in a little cluster of small lemon-coloured flowers. Herb dull, hoary green, rather hairy. Stems 1 to 2 feet high. Leaves wing-cleft, the terminal lobe very large; segments all more or less irregularly cut or serrated, often runcinate or curved backward, especially in the upper leaves. Annual. Flowers from June to August. The Hedge-Mustard was once in repute as an expectorant in asthma, and otherwise valued as a stimulant medicine; hence the specific name *officinalis*.

SISYMBRIUM IRIO. *London Rocket.* TAB. 940.

Leaves runcinate, toothed, smooth as well as the stem. Siliques nearly erect.

*Sisymbrium Irio*, *E. B.* 1631. *Smith* III. 197. *Lindley* 29. *Hooker ed.* 2. 303. *ed.* 3. 307.

This is a very local plant, and exceedingly rare except in London and its neighbourhood; after the memorable fire of 1666 it is recorded to have sprung up in such profusion as to cover the site and ruins of the great city, in which, amid all the renovations and improvements that have since taken place, we still not unfrequently find it flourishing, especially where a breezy nook or old wall is left long undisturbed in the vicinity of the Thames. Stems branched, round, 1 to 2 feet high.

Leaves pinnatifid, the lobes recurved (runcinate). Flowers rather small, yellow. Siliques numerous, very long, erect. The whole plant has the flavour of mustard. Annual. Flowers in July and August.

**SISYMBRIUM SOPHIA.** *Flix-weed.* TAB. 941.

Leaves doubly pinnatifid, slightly hairy; the lobes linear or oval. Petals smaller than the calyx.

*Sisymbrium Sophia*, *E. B.* 963. *Smith* III. 197. *Lindley* 29. *Hooker ed.* 2. 303. *ed.* 3. 307.

Not unfrequent among rubbish and in waste places, but more generally where the soil is calcareous. A highly elegant plant growing to the height of 2 feet, with a rather slender, round, branched stem. The beauty of its finely divided feather-like foliage fully compensates for the inconspicuous character of the inflorescence. Petals very small, pale yellow. Racemes very long when in fruit. Siliques slender, erect, on rather spreading peduncles. Annual. Flowers in July and August. The herb was formerly employed as a remedy in hysteria and dysentery; from its efficacy in restraining the latter originated the popular name. "The pulverized seeds mixed with gunpowder are said to increase its explosive force."

**SISYMBRIUM THALIANUM.** *Common Thale-Cress.* TAB. 942.

Stem branched. Leaves hairy, more or less toothed; radical ones oblong, subpetiolate. Siliques ascending.

*Arabis thaliana*, *Linn.* *E. B.* 901. *Smith* III. 209. *Lindley* 24. *Macreight Man. Brit. Bot.* 15 and 19. *Sisymbrium thalianum*, *Hooker ed.* 2. 303. *ed.* 3. 307.

A very common plant on walls, cottage roofs, and dry gravelly soils. Stem erect, from 2 to 6 or 8 inches in height, solitary, a little branched, rising from the centre of a star-like tuft of radical leaves, which are sometimes entire. Stem-leaves few, distant. Flowers very small, white. Siliques linear, nearly erect, on long, spreading peduncles. The habit of the plant is that of an *Arabis*, but the cotyledons are incumbent instead of accumbent, characters of so much importance in the generic distinctions of this order, that we do not hesitate to follow Professor Hooker in his dissent from its ordinary allotment. Annual. Flowers in April and May.

**GENUS CCCLVIII. ERYSIMUM.** *Treacle-Mustard.*

**GEN. CHAR.** *Calyx* erect, equal at the base. *Silique* tetragonal: valves carinate. *Style* very short. *Stigma* capitate, or emarginate with the lobes patent. *Cotyledons* oblong, flat, incumbent.

Caulescent annual or biennial herbs with yellow, rarely white flowers. They abound throughout the northern hemi-



sphere; a few of the species are ornamental, but they are generally regarded as weeds, are too acrid to be used as food, and have rarely been employed for œconomical purposes. *E. Alliaria* is by some botanists considered as the type of a separate genus.

ERYSIMUM CHEIRANTHOIDES. *Worm-seed. Treacle-Mustard.*

TAB. 943.

Leaves lanceolate, obscurely toothed; clothed with close stellate or forked hairs. Siliques nearly erect, on spreading peduncles. Stigma undivided, nearly sessile.

*Erysimum cheiranthoides*, *E.B.* 942. *Smith* III. 200. *Lindley* 30. *Hooker* ed. 2. 304. ed. 3. 307.

Not uncommon in cultivated ground, waste places, and osier-holts, varying greatly in size, according to situation; the stem sometimes so much branched as to form a considerable bush, at others nearly simple. Flowers very numerous, small, yellow; they open in succession from May to the end of autumn. Biennial. The seeds are sometimes administered in rustic medicine to destroy worms, and the herb was an ingredient in the once-famed Venice Treacle, whence the English names.

ERYSIMUM ALLIARIA. *Garlic Treacle-Mustard, Jack-by-the hedge, Sauce-alone.* TAB. 944.

Leaves heart-shaped, petiolate, sinuato-dentate. Calyx lax.

*Erysimum Alliaria*, *Linn.* *E.B.* 796. *Smith* III. 201. *Hooker* ed. 2. 304. ed. 3. 308. *Alliaria officinalis*, *DeCand.* *Lindley* 29. *Macreight Man. Brit. Bot.* 19.

Few plants are more common on hedge-banks, borders of fields, and waste spots, especially where the soil is rather moist and shaded, than the Sauce-alone, its most common provincial name, whose broad, bright green foliage and corymbi of small but pure white flowers render it conspicuous even amidst the exuberant vegetation of the joyous month of May. Stems 2 or 3 feet high, little branched. Leaves large, stalked, deeply veined, and toothed. Siliques half-erect or forming an obtuse angle with the spreading fruit-stalks. The herb is readily known by its strong garlic-like taste and odour. It is sometimes used as a condiment by country people. Biennial.

ERYSIMUM ORIENTALE. *Hare's-ear Treacle-Mustard.* TAB. 945.

Leaves elliptic-heart-shaped, obtuse, stem-clasping; the radical ones obovate; all smooth, glaucous, entire.

*Brassica orientalis*, *Linn.* *E.B.* 1804. *Erysimum orientale*, *Smith* III. 202. *Lindley* 30. *Hooker* ed. 2. 304. ed. 3. 308. - *Macreight Man. Brit. Bot.* 20.

Occasionally met with in fields and on cliffs near the sea in the eastern and southern counties of England. Stem mostly simple, 1 to 2 feet high, round, smooth, and glaucous, as is the whole plant.

Flowers small, cream-coloured. Siliques very long, linear, strictly tetragonal. Annual. Flowers in June.

GENUS CCCLIX. CHEIRANTHUS. *Wall-flower.*

GEN. CHAR. *Calyx* erect, 2 opposite segments saccate at the base. *Silique* compressed or 2-edged. *Stigma* placed on a style, 2-lobed, the lobes patent or capitate. *Cotyledons* accumbent.

Under-shrubs with ornamental flowers, which are often sweet-scented; their petals present various shades of yellow, orange-red, and rarely purple or white. Chiefly indigenous to Southern Europe and the Atlantic Isles.

CHEIRANTHUS CHEIRI. *Common Wall-flower.* TAB. 946.

Stem shrubby: branches angular. Leaves lanceolate, acute, hoary beneath with simple or bipartite appressed hairs. Siliques linear. Lobes of the stigma patent.

*Cheiranthus fruticosus*, *Linn. Mant. E. B.* 1934. *Smith* III. 203.

*Cheiranthus Cheiri*, *Linn. Sp.* 924. *Lindley* 22. *Hooker ed.* 2. 304. *ed.* 3. 308. *Macreight Man. Brit. Bot.* 14.

This well-known and delightfully fragrant flower, though probably introduced originally from the continent, has long since established its claim to a place in our Flora, by the luxuriance with which it vegetates on the ruins of the ancient castles and monasteries whose gardens it was brought to adorn. The cultivated varieties chiefly differ from the wild plant in the petals being more flaccid, and in the substitution of deeper and variegated hues for the uniform yellow of the original. Flowers in April and May.

GENUS CCCLX. MATTHIOLA. *Stock.*

GEN. CHAR. *Calyx* erect, 2 opposite segments saccate at the base. *Longer filaments* dilated. *Silique* rounded or compressed, crowned with the connivent bilobate stigma, the lobes of which are either thickened at the back, when the *cotyledons* are incumbent; or with a point at the base, when the *cotyledons* are accumbent.

A genus of ornamental maritime plants, chiefly distributed in Southern Europe and around the basin of the Mediterranean. They are either annuals, biennials, or half-shrubs, with glaucous foliage and showy purple, red, or white flowers, which are generally fragrant, especially in the evening. Our native species have unquestionably either migrated from the continent or escaped the confinement of the garden.



MATTHIOLA INCANA. *Hoary Shrubby Stock*. TAB. 947.

Stem shrubby, upright, branched. Leaves lanceolate, obtuse, entire, hoary. Siliques cylindrical, without glands.

*Cheiranthus incanus*, *Linn. E. B.* 1935. *Matthiola incana*, *Smith III.* 205. *Lindley* 22. *Hooker ed. 2.* 304. *ed. 3.* 308.

First noticed by Mr. Turner and Mr. W. Borrer in 1806, growing on the most inaccessible parts of the cliffs near Hastings, Sussex, where, as in some other places on the southern coast, it may still be found, undoubtedly wild in its present propagation, although perhaps originating from seeds designedly scattered, as the occasionally semi-double character of the flowers seems to indicate. This species is the common Stock or Gillyflower, properly July-flower, of our gardens, where, notwithstanding its shrubby character, it can scarcely be regarded as more than biennial. Whole plant hoary with a starry pubescence. Inflorescence corymbose. Petals reddish-purple, with pale green claws. Siliques long, cylindrical, hoary. Flowers very fragrant, expanding from May to July.

MATTHIOLA SINUATA. *Great Sea-stock*. TAB. 948.

Stem herbaceous, spreading. Leaves downy, glandular, obtuse, sinuated; those of the branches entire. Siliques compressed, rough with prominent glands.

*Cheiranthus sinuatus*, *Linn. E. B.* 462. *Matthiola sinuata*, *Smith III.* 206. *Lindley* 22. *Hooker ed. 2.* 304. *ed. 3.* 308.

Long naturalized on the sandy sea-shores of Wales and Cornwall, though probably not indigenous. A native likewise of the Norman Isles. A large, spreading plant, rising to the height of 2 feet or more, and clothed with a dense, hoary, stellated pubescence. Leaves rather succulent, oblong, blunt; the lower ones with 2 or 3 large sinuous indentations on each side, the uppermost entire. Flowers large, reddish-purple or lilac, much resembling those of the preceding, but only fragrant at night. Two outer stamens very short. Lobes of the stigma notched. Siliques very long, thickly set with glandular hairs. Seeds flat, with a membranous border. Biennial. Flowers from May to August.

GENUS CCCLXI. HESPERIS. *Rocket*. *Dame's Violet*.

GEN. CHAR. *Calyx* erect, 2 opposite segments saccate at the base. *Silique* subtetragonal, or 2-edged. *Stigmas* 2, erect, nearly sessile, connivent. *Seeds* oblong, somewhat triangular. *Cotyledons* flat, incumbent.

Plants generally ornamental, with purple, red, or white, often fragrant flowers. Chiefly indigenous to Europe and the northern and central parts of Asia.

HESPERIS MATRONALIS. *Dame's Violet.* TAB. 949.

Stem erect. Leaves ovato-lanceolate, toothed. Siliques smooth, irregularly tumid, their margins not thickened.

*H. inodora*, *Linn. E. B.* 731. *H. matronalis*, *Smith* III. 207. *Lindley* 29. *Hooker ed.* 2. 305. *ed.* 3. 308.

Rare on moist hilly pastures; more frequent in waste places as a wanderer from the garden. Whole herb more or less pubescent, 2 or 3 feet high. Lower leaves sometimes hastate at the base. Flowers pale rose-colour or purple, fragrant after sunset; they appear in May and June. Perennial.

GENUS CCCLXII. BRASSICA. *Cabbage, Turnip, Rape.*

GEN. CHAR. *Calyx* erect. *Silique* bivalvular, with either a sterile, one-, or many-seeded beak. *Cotyledons* conduplicate.

Herbs, annual or biennial, rarely perennial, generally indigenous to Europe and central Asia. Flowers mostly yellow, seldom white or purple. In an œconomical point of view the most valuable genus of its order.

BRASSICA NAPUS. *Wild Navew, Rape, Cole-Seed.* TAB. 950.

Root fusiform. Leaves smooth; upper ones cordato-lanceolate, stem-clasping; lower ones lyrate, toothed.

*Brassica Napus*, *E. B.* 2146. *Smith* III. 217. *Lindley* 32. *Hooker ed.* 2. 305. *ed.* 3. 309.

Frequent on hedge-banks, corn-fields, and waste ground, rising to the height of 1 or 2 feet, with a smooth, round, slightly striated stem. Leaves pale green, the lower ones with crenated lobes, the uppermost entire; the deeply cloven, lyrate radical ones generally disappear as the stem shoots up to flower. Petals bright yellow. Whole herb glaucous. Biennial. Flowers in May and June. Cultivated for the oil produced from its seeds, the cakes of which formed by expression are employed for feeding cattle, and often as manure.

BRASSICA RAPA. *Common or Wild Turnip.* TAB. 951.

Root orbicular, depressed, fleshy. Radical leaves lyrate, rough; those of the stem nearly entire, smooth.

*Brassica Rapa*, *E. B.* 2176. *Smith* III. 217. *Lindley* 32. *Hooker ed.* 2. 305. *ed.* 3. 309.

A frequent plant on the borders of fields, but probably only naturalized through long cultivation. Root generally orbicular (in poor soils sometimes tapering), acrid and woody when truly wild. Stem erect, 1 to 2 feet high, branched above, smooth. Lower leaves lyrate and jagged, dark green, rough; upper ones nearly entire, heart-shaped at the base and stem-clasping, rather glaucous. Flowers in terminal corymbi, bright yellow, larger than in *B. Napus*. Siliques cylindrical, veiny, smooth. Biennial. Flowers in April and May.



The species of *Brassica*, like some other plants which have been long under cultivation, are rather confused by cross impregnation; but this, if a distinct species *à priori*, may be regarded as the origin of most of the common kinds of Turnip. Notwithstanding their very general application as food both for man and cattle, Turnips are found to contain but a small proportion of really nutritious matter; according to the experiments of Sir H. Davy little more than 4 parts in the 100.

BRASSICA OLERACEA. *Cabbage, Sea Cabbage.* TAB. 952.

Root cylindrical, fleshy. Leaves smooth, glaucous, waved and lobed, partly lyrate. Beak of the silique abbreviated.

*Brassica oleracea*, *E. B.* 637. *Smith* III. 219. *Lindley* 32. *Hooker* ed. 2. 305. ed. 3. 309.

This species, the origin of all the cultivated varieties of Cabbage, is found native in its wild state on maritime rocks and cliffs in various parts of the kingdom. Stem cylindrical, 6 or 8 inches to 1 or 2 feet high. Lower leaves large, various in outline, but always more or less divided, waved, or sinuated; upper ones oblong, obtuse, toothed, sessile, but not stem-clasping. Flowers large, lemon-coloured. Siliques smooth, unequally turgid. Seeds large, globular. Biennial. Flowers in May and June. Beside the common garden Cabbages, the Kales and Kohls, the Savoy, Cauliflowers, and Broccoli, in almost countless variety, are the lineal descendants of this species, cultivated from time immemorial by the northern and central nations of Europe. The most remarkable variety is the Cæsarean Cow Cabbage or Tree Kale lately introduced to this country: in La Vendée its palm-like stem is said often to reach the height of 15 or 20 feet.

BRASSICA MONENSIS. *Isle of Man Cabbage.* TAB. 953.

Stems simple, smooth, nearly leafless. Leaves glaucous, deeply pinnatifid; the lobes oblong, unequally toothed. Siliques obscurely quadrangular, smooth; beaks 1-, rarely 2- or 3-seeded.

*Sisymbrium Monense*, *Linn. E. B.* 962. *Brassica Monensis*, *Smith* III. 220. *Lindley* 32. *Hooker* ed. 2. 305. ed. 3. 309. *Diploaxis saxatilis*, *DeCand. Macreight Man. Brit. Bot.* 22.

Found on the sandy sea-shores of the Isle of Man and the opposite coasts of Ireland and Scotland, rare elsewhere. Stems several from the same root, 6 inches to a foot in length, partly prostrate, spreading, smooth, or slightly hispid. Leaves mostly radical, somewhat fleshy, on long petioles; the deep, narrow lobes unequally toothed, and partly runcinate. Flowers large, yellow. Whole plant glaucous and nearly smooth. Perennial. Flowers in June and July. *Hooker* observes that the herb is greedily eaten by cattle and sheep, and is probably deserving of cultivation as fodder.

BRASSICA CAMPESTRIS. *Field Cabbage, Wild Navew.* TAB. 954.

Root tapering. Radical leaves lyrate, toothed, rough; those of the stem smooth, amplexicaule, partly pinnatifid.

*Brassica campestris*, *E. B.* 2234. *Smith* III. 218. *Lindley* 32. *Hooker* ed. 2. 305. ed. 3. 309.

Not very uncommon by the sides of rivers and ditches, and sometimes met with in cultivated ground. Stem erect, branched, hispid toward the lower part with scattered bristles, which are glandular at the base, as are sometimes those upon the radical leaves. Flowers yellow. Siliques nearly cylindrical, veiny; seeds forming slight prominences; beak awl-shaped, striated, square at the base. Herb more or less glaucous. Annual. Flowers from June to August. Several varieties of this plant are found in cultivation, of which the most valuable is the Swedish Turnip; others are grown in some parts of the continent as fodder for sheep and cattle, and likewise for the sake of the expressed oil; but the seeds yield the latter in less quantity than those of the true Rape, *B. Napus*.

### GENUS CCCLXIII. SINAPIS. *Mustard*.

GEN. CHAR. *Calyx* spreading. *Silique* bivalvular; the beak sometimes bearing seeds, without valves. *Cotyledons* conduplicate.

Herbs, mostly annual, with yellow flowers. The genus resembles *Brassica* except in the spreading calyx: it is distributed over various parts of the eastern hemisphere, Europe, central Asia, North and South Africa, and Australia, presenting each its indigenous species.

#### SINAPIS ARVENSIS. *Wild Mustard. Charlock.* TAB. 955.

Leaves toothed, partly lyrate or hastate. Siliques multangular, turgid and knotty, longer than the 2-edged beak.

*Sinapis arvensis*, *E. B.* 1748. *Smith* III. 221. *Lindley* 33. *Hooker* ed. 2. 306. ed. 3. 309.

One of the most frequent and troublesome weeds in corn-fields and moist arable land in general; common likewise on waste ground, hedge-banks, &c., especially where the soil has been recently disturbed. A rough-looking plant 1 or 2 feet high, more or less covered with sharp, recurved bristles. Petals bright yellow. Siliques nearly upright, suboctangular, about twice as long as the beak. Annual. Flowers in May and June.

#### SINAPIS ALBA. *White Mustard.* TAB. 956.

Leaves pinnatifid. Siliques spreading, bristly, turgid, knotty, shorter than the flat, 2-edged beak.

*Sinapis alba*, *E. B.* 1677. *Smith* III. 222. *Lindley* 33. *Hooker* ed. 2. 306. ed. 3. 310.

Frequent on road-sides, waste ground, hedge-banks and cultivated fields, where it grows to the height of a foot or more, with a hairy, branched and somewhat spreading stem. The leaves are variable,



but mostly pinnatifid or partaking of a lyrate form, the segments jagged and toothed. The spreading pods, scarcely equalling in length their flattened 2-edged beak, form the chief character of distinction in this species. Flowers yellow. The seed-leaves of the White Mustard are well known as one of our most common salads, and the companion at table of the Cress, *Lepidium sativum*. Annual. Flowers in July.

**SINAPIS NIGRA.** *Common Mustard.* TAB. 957.

Lower leaves lyrate, rough; upper ones linear-lanceolate, entire, smooth. Siliques adpressed to the stem, quadrangular, smooth; beak very short.

*Sinapis nigra*, *E. B.* 969. *Smith* III. 222. *Lindley* 33. *Hooker ed.* 2. 306. *ed.* 3. 310.

About as common as the last in similar situations, but a much larger and more bushy plant. The round, nearly smooth stem rises to the height of 3 or 4 feet. Lower leaves large, rough, variously lobed and toothed; the upper ones quite entire and smooth. Flowers bright yellow. Siliques short, erect, and closely pressed to the stem; tipped with the short, square, permanent, but scarcely beak-like style. Annual. Flowers in June. This is the species whose seeds furnish the mustard of our tables.

**SINAPIS TENUIFOLIA.** *Fine-leaved Mustard.* *Wall Rocket.* TAB. 958.

Stem smooth. Leaves lanceolate, very acute, pinnatifid or bipinnatifid. Peduncles spreading. Siliques erect, smooth; the beak very short.

*Sisymbrium tenuifolium*, *Linn. E. B.* 525. *Diploaxis tenuifolium*, *DeCand. Lindley* 33. *Macreight Man. Brit. Bot.* 22. *Sinapis tenuifolium*, *Smith* III. 223. *Hooker ed.* 2. 206. *ed.* 3. 210.

Not uncommon on the walls of old towns and cities, especially in the southern and maritime counties of England: about London it is frequent, and grew so abundantly upon the balustrades and cornices of the old bridge, as when in flower to overpower the various mercantile and manufacturing odours that greeted the pedestrian who crossed it on a still summer's evening. Stem a foot to 18 inches high, branched, nearly smooth. Leaves glaucous, rather fleshy; the segments entire or obscurely notched. Flowers palish yellow, with a strong scent which is very disagreeable when close, but at a little distance partakes somewhat of that of the Wall-flower, *Cheiranthus*. Perennial. Flowers from July to September.

**SINAPIS MURALIS.** *Sand Mustard.* *Sand Rocket.* TAB. 959.

Stem spreading, hairy. Leaves smooth, toothed or lyrate. Peduncles spreading. Siliques ascending, smooth; the beak very short.

*Sisymbrium murale*, *Linn. E. B.* 1090. *Diploaxis muralis*, *DeCand. Lindley* 33. *Macreight Man. Brit. Bot.* 22. *Sinapis muralis*, *Smith* III. 224. *Hooker ed.* 2. 306. *ed.* 3. 310.

Grows in barren, sandy ground near the sea in the south and south-west of England; in the Isle of Thanet it is abundant. So near *S. tenuifolium* that it might readily be taken for a variety of that species: the annual root, hairy and spreading stem, and smaller flowers form the chief distinctions. The seeds of both these latter plants and some exotic species of *Sinapis* are arranged in double rows, contrary to their ordinary disposition in this genus: hence their separation by DeCandolle under the title of *Diplotaxis*. Flowers in August and September.

GENUS CCCLXIV. RAPHANUS. *Radish*.

GEN. CHAR. *Calyx* erect. *Siliques* without valves; separating transversely in one- or few-seeded joints. *Seeds* in a single row, globose, pendulous. *Cotyledons* conduplicate.

Herbs of the eastern hemisphere with yellow, white, or purplish flowers. Annual or biennial.

RAPHANUS RAPHANISTRUM. *Wild Radish. Jointed Charlock.* TAB. 960.

Leaves simply lyrate. Siliques one-celled, moniliform, striated; joints one-seeded.

*Raphanus Raphanistrum*, *E. B.* 856. *Smith* III. 256. *Lindley* 34. *Hooker ed.* 2. 306. *ed.* 3. 310.

Equally frequent and troublesome as a weed with *Sinapis arvensis*, which is its general companion in arable land, and liable to be confounded with it by the inexperienced eye: the closed calyx, however, and deeply-veined petals sufficiently distinguish this, even previous to the production of the siliques, which render the generic character too obvious to be mistaken. Flowers mostly yellow with deep purple veins, changing to white in maturity, and in some soils always so. Annual. Flowers in June and July.

RAPHANUS MARITIMUS. *Sea-Side Radish.* TAB. 961.

Radical leaves interruptedly lyrate. Siliques one-celled, moniliform, deeply furrowed; joints one-seeded.

*Raphanus maritimus*, *E. B.* 1643. *Smith* III. 226. *Lindley* 34. *Hooker ed.* 2. 307. *ed.* 3. 310.

Met with on the sea-coast in several places in the kingdom, but far from common. The root is large and succulent, and at least biennial. Stem 3 or 4 feet high, stout, rough with prickles, especially toward the base. Leaves all rough and sharply crenated; the radical ones interruptedly lobed and pinnatifid. Petals deep yellow, smaller, and less veined than those of *R. Raphanistrum*, and the siliques more truly moniliform and deeply striated than in that species. Cattle are very fond of the foliage, and the roots have somewhat the flavour of Horse-radish, as observed on the authority of Dr. Walker in the first edition of English Botany, but in our limited experience



do not seem sufficiently pungent in a wild state to be employed as a substitute for that condiment. Flowers in June and July.

## CLASS XVI. MONADELPHIA.

### ORDER I. PENTANDRIA.

#### GENUS CCCLXV. ERODIUM. *Heron's-bill*.

*Nat. Order.* GERANIACEÆ.

GEN. CHAR. *Calyx* 5-leaved. *Petals* 5. *Stamens* 10, 5 only bearing anthers, the sterile ones with glands at the base; *filaments* very obscurely united below. *Styles* concrete. Fruit beaked, separating into 5 one-seeded *capsules*, each with a long spiral awn (style) bearded on the inside.

Herbs or under-shrubs, with pinnate or lobed leaves, and purple, red or rarely white flowers. Natives of Europe, Asia, and Africa, especially around the basin of the Mediterranean.

#### ERODIUM CICUTARIUM. *Hemlock-leaved Heron's-bill*. TAB. 962.

Stems prostrate, hairy. Leaves pinnate; leaflets sessile, pinnatifid and cut. Peduncles many-flowered. Petals longer than the calyx. Stamens simple.

*Erodium cicutarium*, *E. B.* 1768. *Smith* III. 229. *Lindley* 58. *Hooker ed.* 2. 308. *ed.* 3. 312. *Geranium cicutarium*, *Linn.*

Frequent on sandy and gravelly soils, but varying greatly in luxuriance according to situation; on dry heaths and waste ground it is among the humblest of our native plants, under hedges its otherwise procumbent shoots sometimes rise to the height of 12 or 18 inches. Under all circumstances it is a highly elegant species, and well worthy of cultivation in the alpine garden. The bright purple or rose-coloured flowers terminate the peduncles in small umbels, and are developed in succession throughout the summer. Petals occasionally spotted at the base; very rarely white. Annual. Whole plant pubescent.

#### ERODIUM MOSCHATUM. *Musky Heron's-bill*. TAB. 963.

Stems depressed, hairy. Leaves pinnate; leaflets nearly sessile, ovate, unequally serrated. Peduncles many-flowered. Perfect stamens toothed at the base.

*Erodium moschatum*, *E. B.* 902. *Smith* III. 230. *Lindley* 58. *Hooker ed.* 2. 308. *ed.* 3. 312. *Geranium moschatum*, *Linn.*

This species, well distinguished from *E. cicutarium* by its powerful musk-like scent, equal and less divided leaflets, and toothed filaments,

occurs on elevated pastures in several parts of the kingdom, but must be regarded as a local plant, although probably often overlooked from its near resemblance to the above. Whole herb hairy, and viscid to the touch. Terminal leaflet generally united to the pair below it. Stipules and bracteas membranaceous. Calyx tipped with red. Petals rose-coloured, rather linear. Dilated bases of the fertile filaments terminating in a tooth-like process on each side. Annual. Flowers through the summer.

**ERODIUM MARITIMUM.** *Sea-side Heron's-bill.* TAB. 964.

Stems depressed, hairy. Leaves simple, ovato-cordate, somewhat lobed, crenate, rough; petiolate. Peduncles 1- to 3-flowered.

*Erodium maritimum*, *E. B.* 646. *Smith* III. 231. *Lindley* 58.

*Hooker ed.* 2. 308. *ed.* 3. 312.

Somewhat rare, on sandy and gravelly sea-shores, chiefly in the south of England. Stems spreading widely. Leaves on long petioles. Calyx-leaves tipped with awns. Petals small, pale red, very fugacious. Perennial. Flowers from May to October.

## ORDER II. DECANDRIA.

**GENUS CCCLXVI. GERANIUM.** *Crane's-bill.*

*Nat. Order.* GERANIACEÆ.

**GEN. CHAR.** *Calyx* 5-leaved. *Petals* 5, equal. *Stamens* all fertile, 5 alternate ones longer, and with glands at the base; filaments scarcely united below. *Styles* concrete. *Fruit* beaked, separating into 5 one-seeded capsules, each with a long naked awn (style) coiling in a circinnate manner from the base to the apex.

A large genus of herbaceous plants, some of which are met with in almost every part of the globe, though chiefly in the more temperate climates. Perennial or annual. Stems with tumid joints. Leaves palmately lobed. Peduncles mostly 2-flowered. Flowers various shades of purple or red, rarely white or direct blue. Under the title of *Geranium* Linnæus included *Erodium*, now placed in the order *Pentandria*, and *Pelargonium*, the African Stork's-bill, or *Geranium* of the greenhouses, whose flowers are most frequently heptandrous; but however convenient may be the separation of these genera by modern botanists, the distinctive characters are at best very arbitrary, especially as regards the number of the stamens, which are always ten including the barren filaments, but are rarely all antheriferous unless in *Geranium* itself, which, though



generally said to be decandrous, presents several species that are constantly pentandrous, owing to the sterility of the outer series, and hence only distinguishable from *Erodium* by the naked and non-spiral awns of the fruit. Plants all astringent.

\* *Peduncles 2-flowered. Perennial.*

GERANIUM PHÆUM. *Dusky Crane's-bill.* TAB. 965.

Stem erect. Peduncles 2-flowered, paniced, or opposite the leaves. Calyx slightly awned. Petals waved. Capsules keeled, hairy below, wrinkled above.

*Geranium phæum*, *E. B.* 322. *Smith* III. 232. *Lindley* 56. *Hooker ed.* 2. 308. *ed.* 3. 312.

This species, not uncommon as a cultivated plant in gardens, is found wild in the rocky woods and thickets of the north of England, rising to the height of about 2 feet, with erect, dichotomously branched, hairy stems. Leaves alternate, 3- to 7-lobed (the lobes very acute, cut and serrated), very deeply veined, clothed as well as the calyx with a downy pubescence. Stipules and bractæas chaffy. Petals of a dingy, blackish purple, glossy. Perennial. Flowers in May and June.

GERANIUM NODOSUM. *Knotty Crane's-bill.* TAB. 966.

Leaves opposite, 5- or 3-lobed, pointed, serrated. Peduncles 2-flowered. Capsules even, downy all over.

*Geranium nodosum*, *E. B.* 1091. *Smith* III. 233. *Lindley* 56. *Hooker ed.* 2. 309. *ed.* 3. 313.

A doubtful native, said to have been found among the mountains of Cumberland, and met with more recently between Hatfield and Welwyn, Herts, in the latter situation probably a straggler from the garden. Creeping at the base. Stems erect, about a foot high, red, glossy, very much swollen beneath the joints. Leaves opposite, on petioles, rather glossy, serrated; seldom more than 3-lobed. Petals purple, with deeper veins, notched. Perennial. Flowers from May to August. An elegant plant for rock-work, the foliage being less redundant than in most of the other perennial species of *Geranium*.

GERANIUM SYLVATICUM. *Wood Crane's-bill.* TAB. 967.

Stem erect. Leaves subpeltate, with 5 or 7 deep and acute lobes, variously cut and serrated. Peduncles 2-flowered, somewhat corymbose. Filaments awl-shaped, fringed. Capsules keeled, hairy all over.

*Geranium sylvaticum*, *E. B.* 121. *Smith* III. 234. *Lindley* 56. *Hooker ed.* 2. 309. *ed.* 3. 313.

Inhabits woods, thickets, and sometimes pastures and the banks of rivers; frequent in the subalpine districts of the north of England and Scotland. Herb pubescent. Stem 1 to 2 feet high. Leaves very strongly and conspicuously veined. Flowers numerous, purplish-blue

with crimson veins, larger than those of the two preceding, but much smaller than in the following species. Perennial. Flowers in June and July.

**GERANIUM PRATENSE.** *Meadow Crane's-bill.* TAB. 968.

Leaves 5- rarely 7-partite, the lobes sharply pinnatifid and serrated. Peduncles 2-flowered. Filaments dilated at the base, smooth. Capsules hairy all over.

*Geranium pratense*, *E. B.* 404. *Smith* III. 235. *Lindley* 56. *Hooker ed.* 2. 309. *ed.* 3. 313.

Moist thickets and pastures in several parts of the kingdom produce this handsome species, which is however more commonly a subalpine plant. Stems 1 to 2 feet high. Leaves generally with 5 very distinct lobes, which are deeply cut into linear segments and serratures. Flowers very large; the petals purplish-blue, veined, obovate, scarcely notched, hairy at the base. A double-flowered variety is common in gardens, but the flowers are smaller than in the wild plant. Perennial. Flowers in June and July.

**GERANIUM PYRENAICUM.** *Mountain Crane's-bill.* TAB. 969.

Stems erect, branched. Leaves reniform, 5- to 7-lobed; the lobes obtuse, trifid and toothed at the apex. Peduncles 2-flowered. Petals twice as long as the calyx, deeply notched. Capsule keeled, somewhat downy.

*Geranium pyrenaicum*, *E. B.* 405. *Smith* III. 239. *Lindley* 57. *Hooker ed.* 2. 309. *ed.* 3. 313.

Notwithstanding both its English and Latin names, this species is chiefly met with in England as an inhabitant of the low meadow and pasture. It is probably an introduced plant, being very local in its attachment, although multiplying so rapidly by seed as to become a very troublesome weed where once established, as is the case in Battersea fields and some other spots in that vicinity. Stems 2 to 3 feet high, with distant spreading branches. Root leaves spreading close to the ground. Flowers reddish-purple or lilac, rather small, numerous. The 5 outer stamens sometimes sterile. Perennial. Flowers in June and July. This has more the habit of an annual than perennial plant, and unless in flower might be confounded with either *G. molle* or *G. pusillum*; but the smooth, not wrinkled capsules especially distinguish it from the first, and the larger flowers from both.

**\*\* Peduncles 2-flowered. Annual.**

**GERANIUM LUCIDUM.** *Shining Crane's-bill.* TAB. 970.

Leaves roundish, 5-lobed; the lobes trifid or notched. Peduncles 2-flowered. Calyx pyramidal, transversely wrinkled, tuberculated. Capsules triply keeled, wrinkled.

*Geranium lucidum*, *E. B.* 75. *Smith* III. 236. *Lindley* 57. *Hooker ed.* 2. 309. *ed.* 3. 313.



This pretty little species grows on rocks, walls, and cottage roofs in various parts of the kingdom, but is most abundant in mountainous or subalpine districts. Stems branched, bright red, very smooth and glossy. Leaves shining, bright green, more or less tipped with crimson, and where much exposed often wholly tinged with that colour. Flowers small, bright rose-colour; produced in succession through the summer. Annual.

GERANIUM ROBERTIANUM. *Herb Robert.* TAB. 971.

Leaves mostly ternate, somewhat pedate; leaflets pinnatifid, the segments mucronate. Peduncles 2-flowered. Calyx 10-angled, hairy. Capsules downy, wrinkled.

*Geranium Robertianum*, *E. B.* 1486. *Smith* III. 235. *Lindley* 57. *Hooker* ed. 2. 310. ed. 3. 314.

Var.  $\beta$ ., with naked capsules and smaller flowers. TAB. 971\*.

*G. purpureum*, *E. B. Supp.* 2648. *G. Raii*, *Lindley* 57. *G. Robertianum*,  $\beta$ ., *Smith* III. 236. *Macreight Man. Brit. Bot.* 43.

One of the commonest and most elegant of British plants, and adapted to all soils and aspects, from the wall-top or dry sunny bank to the deep shade and luxuriance of the forest. Whole herb more or less hairy, brittle. Stems branched, spreading. Leaves on long petioles, ternate, 5-angled in their general outline; the segments deeply cut and pinnatifid, the points all very acute; surface shining, scattered with hairs. Flowers conspicuous. Petals entire, red or purple, with white streaks from the base, rarely all white. The strong and peculiar odour of this species is disagreeable to many persons. In exposed situations the stems and leaves often present the bright crimson hue assumed by those of *G. lucidum*. Annual. Flowers through the summer and autumn.

The var.  $\beta$ . occurs frequently on the southern and western coasts of England and Wales. The smaller petals and other variations are probably the results of its maritime position, and are certainly not of sufficient importance to warrant its separation as a distinct species.

GERANIUM MOLLE. *Soft Dove's-foot Crane's-bill.* TAB. 972.

Leaves rounded, lobed and cut, downy. Peduncles 2-flowered, alternate, opposite the leaves. Petals notched, scarcely longer than the calyx. Capsules transversely wrinkled. Seeds without dots.

*Geranium molle*, *E. B.* 778. *Smith* III. 237. *Lindley* 57. *Hooker* ed. 2. 310. ed. 3. 314.

Very common in dry pastures, waste places, and by road-sides. Stems procumbent and spreading: thickly clothed with long, soft hairs, a character which pervades the whole herb, whence the specific name. Segments of the leaves very broad, and in the lower ones overlapping each other, not linear and distant as in *G. pusillum*. Peduncles solitary, opposite the generally alternate leaves of the stem.

Flowers small; the petals purple, deeply notched. Seeds quite smooth. Annual. Flowers through the summer and autumn.

GERANIUM ROTUNDIFOLIUM. *Round-leaved Crane's-bill.*  
TAB. 973.

Leaves roundish or reniform, lobed and cut, downy. Peduncles 2-flowered. Petals entire, the length of the calyx. Capsules even, hairy. Seeds dotted.

*Geranium rotundifolium*, *E. B.* 157. *Smith* III. 240. *Lindley* 57. *Hooker ed.* 2. 310. *ed.* 3. 314.

Occasionally met with in pastures and waste ground, but far from frequent. Stems branched, straggling, but more erect than ever occurs in *G. molle*, from which it is well distinguished by the entire petals, even capsules and dotted seeds, though approaching it in general appearance. Flowers about June and July. Petals reddish-purple. Annual.

GERANIUM PUSILLUM. *Small-flowered Crane's-bill.* TAB. 974.

Leaves reniform, palmate; the lobes trifid. Peduncles 2-flowered. Flowers pentandrous. Petals notched. Capsules even, keeled, downy with erect somewhat appressed hairs. Seeds without dots.

*Geranium pusillum*, *E. B.* 385. *Smith* III. 238. *Lindley* 57. *Hooker ed.* 2. 310. *ed.* 3. 314.

Frequent on gravelly soils, but less common than *G. molle*, from which the even, not wrinkled capsules and distinctly lobed leaves distinguish it, as do the smooth seeds from *G. dissectum*, and others with which the superficial observer might be apt to confound it. Stem weak, prostrate unless supported. Leaf-lobes 5 to 7, distinct more than half way. Flowers reddish-purple, resembling those of *G. molle* but usually smaller; they come out in succession through the summer and autumn. Annual.

GERANIUM DISSECTUM. *Jagged-leaved Crane's-bill.* TAB. 975.

Leaves palmate; the lobes linear, very deep, trifid and cut. Peduncles 2-flowered. Petals notched, rather shorter than the sharp, awned calyx. Capsules even, hairy. Seeds dotted.

*Geranium dissectum*, *E. B.* 753. *Smith* III. 241. *Lindley* 57. *Hooker ed.* 2. 310. *ed.* 3. 314.

Very common under hedges and in waste ground. Stems spreading, only erect when supported, slightly pubescent, the hairs pointing downwards. Leaf-lobes divided nearly to the petiole, very much spread and deeply trifid. Distinguished from *G. columbinum*, the following species, by its short peduncles and hairy capsules. Petals deep pink, the claws hairy. Annual. Flowers in May and June.

GERANIUM COLUMBINUM. *Long-stalked Dove's-foot Crane's-bill.* TAB. 976.

Leaves 5-fingered; the lobes divided into many linear acute segments.



Peduncles 2-flowered, longer than the leaves. Petals entire, as long as the sharply awned calyx. Capsules even, smooth. Seeds dotted.

*Geranium columbinum*, *E. B.* 259. *Smith* III. 241. *Lindley* 58. *Hooker* ed. 2. 310. ed. 3. 314.

Far from frequent, though not rare on dry pastures and road-sides in a gravelly or calcareous soil. Stems very slender, straggling or procumbent, covered with reflexed hairs. Leaves orbicular in the general outline, the segments all linear, and tipped with dark purple or crimson. Flower-stalks much longer than the leaves. Petals purplish-pink, larger than in any of the native annual species, *G. Robertianum* excepted. Capsules perfectly smooth and even, or very slightly keeled. Annual. Flowers in June and July.

\*\*\* *Peduncles 1-flowered. Perennial.*

GERANIUM SANGUINEUM. *Bloody Crane's-bill.* TAB. 977.

Stems branched, ascending. Leaves nearly orbicular, in 5 or 7 deeply separated lobes, each of which is trifid and somewhat falcate. Peduncles very long, 1-flowered.

*Geranium sanguineum*, *E. B.* 272. *Smith* III. 242. *Lindley* 58. *Hooker* ed. 2. 308. ed. 3. 312.

This, the most beautiful and ornamental of our native species of *Geranium*, is rarely seen but in mountainous districts, where it grows in tufts on the brows of precipices and in rugged pastures, especially upon limestone. Stems rather weak, but nearly erect. Leaves opposite, rough with bristles. Peduncles very long, slender, bearing two small bracteas about midway. Flowers large, showy, deep reddish-purple or crimson. Petals broadly cordate, becoming blue as they fade. Capsules and beaks downy. Whole herb pubescent. Perennial. Flowers in June and July. Few alpine plants flourish so well in the suburban garden, and though seldom so profuse in flowering under cultivation as on its native hills, it is well worthy of a place in the parterre.

GERANIUM LANCASTRIENSE. *Lancashire Crane's-bill.*

Stems very dwarf, nearly simple, tufted. Leaves orbicular, with 3 or 5 ovate, lobed segments.

*Geranium prostratum*, *Lindley* 58. *G. sanguineum*,  $\beta$ , *DeCand.* *Macreight Man. Brit. Bot.* 42. *G. Lancastriense*, *Withering*.

Found on the sandy coast of the Isle of Walney, in Lancashire. The habit is very different from that of *G. sanguineum*, though it is difficult to point out any positive character of distinction to establish it as a separate species. We have cultivated both, side by side, for upwards of 10 years, without noticing any change which might warrant a suspicion of their identity; seedling plants even preserving under all circumstances the peculiarities of the parent. Leaves smaller, and the lobes more distant and ovate. Flowers nearly as

large, but white or very pale flesh-colour with crimson veins. Perennial. Root very strong and woody.

### ORDER III. POLYANDRIA.

ALL of the British plants of this order belong to the

*Nat. Order.* MALVACEÆ.

They abound in mucilage, and are destitute of active or poisonous properties.

#### GENUS CCCLXVII. MALVA. *Mallow.*

GEN. CHAR. *Calyx* double; exterior one (involucellum) 3-leaved, rarely 5- or 6-leaved. *Filaments* forming a tube. *Styles* distinct. *Capsules* numerous, circularly arranged, 1-seeded.

An extensive and very widely distributed genus, some species of which are to be found in almost every part of the globe. In temperate climates they are mostly herbaceous, in tropical ones more or less shrubby. Leaves alternate, generally lobed, stipulate. Flowers various, often ornamental.

#### MALVA SYLVESTRIS. *Common Mallow.* TAB. 978.

Stems generally erect, herbaceous. Leaves with 7 acute lobes. Peduncles and petioles hairy.

*Malva sylvestris*, *E. B.* 671. *Smith* III. 244. *Lindley* 40. *Hooker ed.* 2. 311. *ed.* 3. 315.

Common in meadows, pastures, on hedge-banks and road-sides. Stems erect or rather spreading, branched, 2 or 3 feet high. Leaves roundish, plaited, divided into 7 crenated lobes; the upper ones more angular, 3- or 5-lobed. Flowers axillary, clustered. Petals inversely heart-shaped, purplish rose-colour with deeper veins; connected by the bases of their claws. The whole herb is hairy and rough to the touch. It has a place in the *Materia Medica* as an emollient. Perennial. Flowers from May to August.

#### MALVA ROTUNDIFOLIA. *Dwarf Mallow.* TAB. 979.

Stems prostrate. Leaves roundish heart-shaped, bluntly 5-lobed. Peduncles when in fruit bent downwards.

*Malva rotundifolia*, *E. B.* 1092. *Smith* III. 246. *Lindley* 40. *Hooker ed.* 2. 311. *ed.* 3. 315.



*var. β.* Petals not longer than the calyx. Tab. 979\*.

*Malva pusilla*, *E. B.* 241. *M. parviflora*, *Hudson*.

Frequent on waste ground by the sides of roads and foot-paths. Stems branching only from the base; prostrate, from a few inches to a foot in length. Leaves downy, plaited, obtusely lobed. Flowers axillary, erect. Petals rose-coloured, purple or white. Annual? Flowers from May to September. The variety *β.* differs only in having smaller petals.

**MALVA MOSCHATA.** *Musk Mallow.* TAB. 980.

Stem erect. Radical leaves reniform, in 5 or 7 broad cut lobes; cauline ones in 5 deep, pinnatifid and jagged, linear segments. Calyx hairy; the leaves of the outer one linear-lanceolate.

*Malva moschata*, *E. B.* 754. *Smith III.* 247. *Lindley* 40. *Hooker ed.* 2. 311. *ed.* 3. 315.

Not unfrequent on the borders of fields and by way-sides in a gravelly soil, growing with slender, little branched stems to the height of 2 or 3 feet. Radical leaves soon withering as the stem rises to flower, broadly lobed; those of the stem divided into numerous linear segments. Flowers large, rose-coloured, axillary, 1 or at most 2 from each of the upper leaves, but clustered at the top of the stem owing to the leaves growing close together. The herb yields a faint musky odour when drawn through the hand. Perennial. Flowers in July and August. A very beautiful plant deserving a place in the garden, where however it is seldom seen.

**GENUS CCCLXVIII. ALTHÆA.** *Marsh-Mallow.*

**GEN. CHAR.** *Calyx* double; the outer one (involucellum) 6- to 9-cleft. *Filaments* forming a tube. *Styles* distinct. *Capsules* numerous, circularly arranged, 1-seeded.

Herbaceous plants, chiefly indigenous to the eastern hemisphere. The genus is so closely allied to *Malva* that its separation is rather convenient than natural. Leaves alternate, more or less lobed, stipulate. Flowers various. *Althæa rosea*, the Hollyhock, is well known as an ornament in the garden and shrubbery.

**ALTHÆA OFFICINALIS.** *Common Marsh-Mallow.* TAB. 981.

Herb downy, soft. Leaves cordate, toothed, slightly 3- or 5-lobed.

Peduncles axillary, many-flowered, much shorter than the leaves. *Althæa officinalis*, *E. B.* 147. *Smith III.* 244. *Lindley* 41. *Hooker ed.* 2. 311. *ed.* 3. 315.

A native of salt marshes, fens and ditch-banks near the sea or tide rivers. A stately-looking plant from 3 to 4 feet high, with numerous erect, round, simple stems. Leaves rather acutely angled, unequally

serrated. Flowers large, densely clustered, 3 or 4 together in the axils of the upper leaves. Petals obcordate, of a delicate purplish rose-colour. The whole herb is exceedingly soft and silky to the touch, owing to the dense, but minute starry pubescence with which every part is invested. Perennial. Flowers in August and September. The abundance of mild mucilage which exists in this plant has recommended its introduction to medicine, in which it is more valued than *Malva sylvestris* for its emollient properties. In England we employ the decoction only; in France the mucilage is prepared in the form of lozenges, and made into a delicious syrup under the name of "*Sirop de Guimauve*."

ALTHÆA HIRSUTA. *Hispid Marsh-Mallow*. TAB. 981\*.

Stem hispid. Leaves rough with hairs; the lower ones roundish or cordate, obtusely lobed, serrated; the upper ones palmate or digitate, the lobes linear and unequally toothed. Peduncles single-flowered, longer than the leaves.

*Althæa hirsuta*, *E. B. Supp.* 2674. *Hooker ed.* 2. 312. *ed.* 3. 316. *Macreight Man. Brit. Bot.* 36.

Found in fields near Cobham, Kent, in which vicinity it has been known for many years. Stems spreading or ascending, mostly simple, 6 inches to a foot in length. Flowers rose-purple. Petals scarcely so long as the calyx. Whole plant set with rigid, bristle-like hairs, in addition to the minute stellated pubescence which belongs to most plants of this natural order. Annual. Flowers in June and July.

GENUS CCCLXIX. LAVATERA. *Lavatera*.

GEN. CHAR. *Calyx* double; the outer one (involucellum) 3- to 6-cleft. *Filaments* forming a tube. *Styles* distinct. *Capsules* numerous, circularly arranged, 1-seeded. Axis of the fruit often exserted and more or less dilated (not so in the British species).

This genus, like *Althæa*, is very indistinctly separable from *Malva*. It consists of a series of plants of various habit, either shrubby, or annual or biennial herbs, distributed over the temperate and warmer parts of the <sup>eastern</sup>~~western~~ hemisphere, and generally in maritime districts. The only British species is an original wanderer from the shores of southern Europe.

LAVATERA ARBOREA. *Tree Mallow*. TAB. 982.

Stem arborescent. Leaves downy, plaited, with 7 angles. Peduncles axillary, clustered, single-flowered.

*Lavatera arborea*, *E. B.* 1841. *Smith III.* 248. *Lindley* 41. *Hooker ed.* 2. 311. *ed.* 3. 315.

The Tree Mallow is met with certainly wild on maritime cliffs and



small rocky islets on several parts of the coast of Britain and Ireland, but is not sufficiently hardy to bear our winters inland, unless the weather be mild. Its natural situations show the probability of its being a colonist from a warmer climate. The root seems biennial, or rarely survives after the season of flowering. Stem erect, thick, woody, tree-like, from 5 to 10 feet high, branched toward the upper part. Flowers resembling those of *Malva sylvestris*, but larger, deep purple or rose-colour, darker in the centre; they appear from July to September, and being very numerous, the plant is then highly ornamental.

## ✓ ERRATA.

Page 30, line 30, for *induced* read *induces*.  
— 41, — 24, for *L. Orvola* read *L. Orvala*.





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— mountain .....	108	969	long stalked .....	110	976
— round-leaved .....	110	973	— soft.....	109	972
— shining .....	108	970	Eye-bright, common ...	54	858
— small-flowered ...	110	974	— red .....	53	857
— soft Dove's foot...	109	972	Fetid Horehound, black	38	825
— wood .....	107	967	Field-Mint, rugged .....	32	814
Creeping-Cress .....	94	936	Figwort, balm-leaved ..	64	878
Cress, alpine Penny ...	77	899	— knotty-rooted ...	63	876
— alpine Rock .....	91	928	— water .....	64	877
— amphibious .....	94	938	— yellow .....	64	879
— Bitter .....	90	926	Flix-weed .....	96	941
— bitter Winter .....	92	933	Fluellen, round-leaved..	60	868
— Bristol Rock .....	90	927	— sharp-pointed .....	60	869
— common Thale ...	96	942	Fox-glove, purple .....	65	880
— Creeping .....	94	936	<i>Geraniums, Greenhouse</i> .	106	
— common Wart ....	74	893	Germander, wall .....	35	820
— early Winter .....	93	934	— water .....	35	819
— fringed Rock .....	91	929	— wood .....	35	818
— <i>garden</i> .....	80		<i>Gill</i> .....	47	844
— hairy Wall.....	91	930	<i>Gillyflower</i> .....	99	947
— hairy Bitter .....	89	924	<i>Glastonbury</i> .....	75	
— lesser Wart .....	75	894	<i>Glastum</i> .....	75	895
— Marsh .....	94	937	Globe-flower, common .	25	797
— narrow-leaved Bit-			Goldilocks .....	21	788
ter .....	88	923	Gold-of-Pleasure.....	86	920
— Penny .....	76	897	<i>Goutte de sang</i> .....	19	781
— perfoliate Penny ..	77	898	Ground-Ivy .....	47	844
— Swine's .....	74	893	Ground Pine .....	37	824
— tower Wall .....	91	931	<i>Guimauve, Sirop de</i> ....	114	
— Water .....	93	935	<i>Heart Mint</i> .....	31	810
Cress-rocket, annual ...	76	896	Hedge-Mustard, com-		
Crowfoot, alpine white.	21	786	mon.....	95	939
— bulbous .....	22	791	Hellebore, green.....	27	800
— celery-leaved .....	21	787	— stinking .....	27	801

	Page.	Tab.		Page.	Tab.
Hemp-Nettle, common.	40	830	Marigold, common Marsh	26	798
— downy .....	40	829	— creeping Marsh...	26	799
— large-flowered....	40	831	Marjoram, common ....	34	817
— red .....	40	828	— wild .....	34	817
Henbit .....	42	836	Marsh-Cress .....	94	937
Herb Christopher .....	1	746	Marsh Mallow .....	113	981
<i>Herbe du siège</i> .....	64		Marsh Mallow, hispid .	114	981*
Herb Robert .....	109	971	Marsh Marigold, com-		
Heron's-bill, hemlock-			mon.....	26	798
leaved .....	105	962	— creeping.....	26	799
— musky .....	105	963	<i>Martin's cancer powder</i> .	70	
— sea-side .....	106	964	Meadow-Rue, alpine ...	15	772
<i>Hollyhock</i> .....	113		— common.....	16	775
Horehound, black Fetid	38	825	— greater .....	16	774
— common White...	47	845	— lesser .....	16	773
Horned-Poppy, scarlet.	2	749	Mint, Bergamot .....	30	806
— violet .....	3	750	— bushy Red.....	31	811
— yellow .....	2	748	— common Cat .....	46	843
Horse-Mint .....	29	802	— corn .....	32	813
Horse-Radish.....	83	912	— curled.....	30	805*
<i>Humming Bees</i> .....	62		— fragrant sharp-		
Hutchinsia, rock .....	78	901	leaved .....	31	809
Ivy, Ground .....	47	844	— green .....	29	804
Jack-by-the-hedge.....	97	944	— hairy Water .....	31	807
<i>July flower</i> .....	99	947	— hairy Water .....	31	808
<i>Kales</i> .....	101		— <i>Heart</i> .....	31	810
Kale, Sea .....	74	892	— Horse.....	29	802
— <i>Tree</i> .....	101		— narrow-leaved Red	32	812
<i>Kohls</i> .....	101		— <i>Orange</i> .....	30	806
Koniga, sea-side .....	86	919	— <i>Orange</i> .....	32	
Lady's smock, bitter ...	90	926	— Penny-royal .....	33	815
— common.....	89	925	— Pepper .....	29	805
— daisy-leaved .....	88	922	— round-leaved .....	29	803
Larkspur, field .....	12	769	— rugged Field .....	32	814
— <i>tall branching</i> .....	13	769	— Spear .....	29	804
Lily, least Yellow Water	11	767	— tall Red .....	31	810
— White Water .....	10	765	Mithridate Mustard ....	76	897
— Yellow Water ....	11	766	Moneywort, Cornish ...	66	881
Lime, broad-leaved .....	9	763*	Monk's-hood, common.	13	769*
— common.....	9	763	Motherwort, common..	38	826
— small-leaved .....	10	764	<i>Moutan</i> .....	12	
Lime-tree .....	9	763	Mudwort, common ....	67	882
Linden-tree.....	9	763	Musk-Mallow .....	113	980
Linnæa .....	68	884	Mustard, common .....	103	957
<i>Linnæus</i> .....	9		— common Hedge ..	95	939
Locker Gowllans.....	25	797	— fine-leaved.....	103	958
London Rocket .....	95	940	— Mithridate.....	76	897
Lousewort, marsh .....	58	865	— sand .....	103	959
— pasture .....	58	866	— smooth long-pod-		
Mallow, common .....	112	978	ded Tower .....	92	932
— dwarf.....	112	979	— white .....	102	956
— hispid Marsh.....	114	981*	— wild .....	102	955
— Marsh .....	113	981	Navew, wild .....	100	950
— Musk .....	113	980	— wild.....	101	954
Mallow Tree .....	114	982	— common Hemp...	40	830



	Page.	Tab.		Page.	Tab.
Nettle, cut-leaved Dead	42	835	Red Mint, bushy .....	31	811
— downy Hemp ...	40	829	— narrow-leaved ....	32	812
— Henbit Dead .....	42	836	— tall .....	31	810
— large-flowd. Hemp	40	831	Red-Rattle, dwarf .....	58	866
— red Dead .....	42	834	— tall .....	58	865
— red Hemp .....	40	828	Robert, Herb .....	109	971
— spotted Dead .....	41	833	Rock-Cress, alpine .....	91	928
— white Dead .....	41	832	— Bristol .....	90	927
<i>Nitrogen</i> .....	73		— fringed .....	91	929
<i>Opium</i> .....	5		Rocket .....	99	
<i>Opium Poppy</i> .....	6	756	Rocket, annual Cress ..	76	896
<i>Orange Mint</i> .....	30	806	— common Sea .....	73	891
<i>Orange Mint</i> .....	32		— London .....	95	940
<i>Pæony, double</i> .....	12		— Sand .....	103	959
— entire-leaved .....	12	769	— Wall .....	103	958
— <i>Tree</i> .....	12		— <i>yellow</i> .....	93	
Pasque-flower .....	17	777	<i>Rock Rose</i> .....	6	
Peloria .....	61	872	Rose, Christmas .....	27	
Penny-Cress .....	76	897	Rue, alpine Meadow ...	15	772
Penny-Cress, alpine ...	77	899	— common Meadow.	16	775
— perfoliate .....	77	898	— greater Meadow..	16	774
Penny-royal .....	33	815	— lesser Meadow ...	16	773
Peppermint .....	29	805	<i>Russian Mats</i> .....	9	
<i>Pepper-root</i> .....	87		Sage, Wood .....	35	818
Pepperwort, broad-leaved	80	904	Sand Rocket .....	103	956
— common Mithridate	80	906	<i>Savoys</i> .....	101	
— narrow-leaved ....	80	905	Sauce-alone .....	97	944
— smooth-fruited Field	81	907	Scurvy-grass, common.	82	908
— Whitlow .....	81	907*	— Danish .....	83	911
Pheasant's Eye .....	19	781	— English .....	82	910
Pilewort .....	20	785	— Greenland .....	82	909
Pine, Ground .....	37	824	Sea-Kale .....	74	892
Poppy, common red ...	5	755	Sea-Rocket, common...	73	891
— corn .....	5	755	Self-heal, common .....	51	852
— long prickly-headed	4	752	Setter-wort .....	27	801
— long smooth-headed	5	754	Shepherd's-Purse, com-		
— mongrel .....	4	753	mon .....	77	900
— naked-stalked yel-			Sibthorpia, creeping ...	66	881
low .....	4	753*	<i>Sirop de Guimauve</i> .....	114	
— <i>Opium</i> .....	6	756	Skull-cap, common ...	51	853
— round rough-headed	4	753	— lesser .....	52	854
— scarlet Horned ...	2	749	<i>Slough heal</i> .....	51	852
— violet Horned ....	3	750	Snapdragon, great .....	62	874
— Welsh .....	3	751	— lesser .....	63	875
— white .....	5	756	Spear-Mint .....	29	804
— yellow Horned ...	2	748	Spear-wort, great .....	20	782
<i>Poppy-heads, druggists'</i>	5		— lesser .....	20	783
Radish, Horse .....	83	912	Stock, <i>annual</i> .....	99	947
— sea-side .....	104	961	— great sea .....	99	948
— wild .....	104	960	— hoary shrubby ...	99	947
Rape .....	100	950	<i>Stork's bill, African</i> ...	106	
Rattle, common Yellow	54	859	Sun-Cistus, common...	7	760
— dwarf Red .....	58	866	— dotted-leaved .....	8	761
— large bushy Yellow	55	859*	— hoary .....	6	757
— tall Red .....	58	865	— Ledum-leaved ....	7	759*

	Page.	Tab.		Page.	Tab.
Sun-Cistus, spotted an- nual .....	7	758	Water Aloe.....	15	771
—— <i>tomentose</i> .....	8	760*	Water Betony.....	64	877
—— white mountain ..	8	762	Water-Cress .....	93	935
<i>Swedish Turnip</i> .....	102		Water-Crowfoot.....	24	795
Swine's-Cress .....	74	898	Water-Crowfoot, small- flowered .....	24	
<i>Syrup of Poppies</i> .....	5		Water-Lily, least Yellow	11	767
Teesdalia, naked-stalked	78	902	—— white .....	10	765
Thale-Cress, common ..	96	942	—— Yellow .....	11	766
Thyme, common Basil.	48	846	Water Soldier.....	15	771
—— wild .....	33	816	Weasel snout, yellow...	39	827
Toad-flax, creeping pale blue .....	60	870	Welsh Poppy, common.	3	751
—— deformed yellow..	61	872	White Horehound, com- mon.....	47	845
—— Ivy-leaved .....	59	867	Whitlow-grass, common	84	914
—— least .....	61	873	—— rock .....	85	916
—— purple .. . . .	61		—— speedwell-leaved .	85	918
—— round-leaved .....	60	868	—— twisted-podded...	85	917
—— sharp-pointed ....	60	869	—— yellow alpine.....	84	915
—— yellow .....	61	871	Wind-flower .....	17	
Tooth-wort, greater ...	57	864	Winter-Cress, bitter ...	92	933
Tower-Mustard, smooth long-podded ....	92	932	—— early .....	93	934
Traveller's Joy, common	17	776	Woad, Dyer's....	75	895
Treacle-Mustard, garlic	97	944	Wolf's-bane .....	13	769*
—— Hare's-ear.....	97	945	Wood Betony.....	43	837
—— Worm-seed .....	97	943	<i>Wood Sage</i> .....	35	
Tree Mallow.....	114	982	Wood Sage.....	35	818
<i>Tree Pæony</i> .....	12		Wormseed .....	97	943
Turnip, common .....	100	951	Woundwort, ambiguous	44	839
—— <i>Swedish</i> .....	102		—— <i>Clown's</i> .....	45	840
—— wild .....	100	951	—— corn .....	45	842
Vervain, common .....	67	883	—— downy .....	45	841
Violet, Dame's .....	100	949	—— hedge.....	44	838
Virgin's Bower .....	17	776	—— marsh.....	45	840
Wall-Cress, hairy .....	91	930	—— pale annual .....	45	842*
—— tower .....	91	931	Yellow-Rattle, common	54	859
Wall-flower .....	98	946	—— large bushy .....	55	859*
Wall Rocket .....	103	958	Yellow Water Lily, common .....	11	766-
Wart-Cress, common ..	74	893	—— least .....	11	767
—— lesser .....	75	894			

END OF THE FIFTH VOLUME.



918.  
746.



*Actaea spicata.*

Aug. 1830. P. B. & C. & H. & W. & L. & C.





1581

747.



*Chelidonium majus.*

Apr 1. 1866. Published by Jas. Sowerby, London.







*Glaucium luteum.*





1433

749.



*Glaucium phaeiceum.*

March 1. 1805. Published by J. Sowerby, London.







*Glaucium  
violaceum.*

Sowerby del<sup>d</sup> Sept 1794





00.  
751.



*Meconopsis*  
*Cambrica.*





643.  
752.



*Papaver Argemone.*

1796. Published by J. G. Smith, London.







*Papaver hybridum.*

*Flora de la India, 1877.*











*Papaver dubium.*





645.

755.



*Papaver Rhoeas.*

0. 1170. Rhoeas v. 1170.





2145.

750.



*Papaver somniferum.*

May 1850 published by J. Sowerby London







*Helianthemum canum.*

May 1<sup>st</sup> 1797 Pick. by J<sup>r</sup> Sowerby. Lond. 7.







*Helianthemum guttatum.*





2414.

759.



*Helianthemum*  
*ledifolium*







*Helianthemum*  
*vulgare*





2208.

700\*



*Primula sp.* 164. 7. 2. m. 5



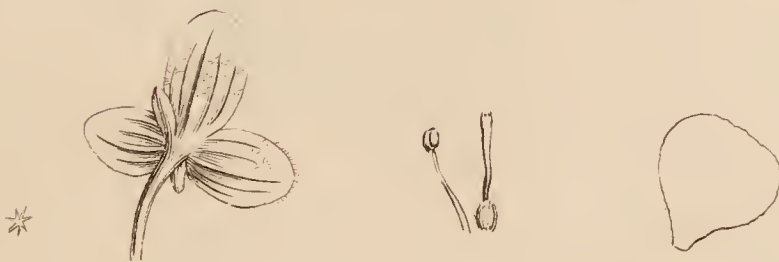




*Helianthemum*  
*Surrejanum.*







*Helianthemum polifolium.*







*Tilia Europaea.*



July 1. 17. 1. Botanical J. L. S. 1847. 1848.







November 1<sup>st</sup> 1897.





1705

461.



*Tilia parviflora.*

Feb. 1867. Published by Jas. Sowerby, London.







*Nymphaea alba.*



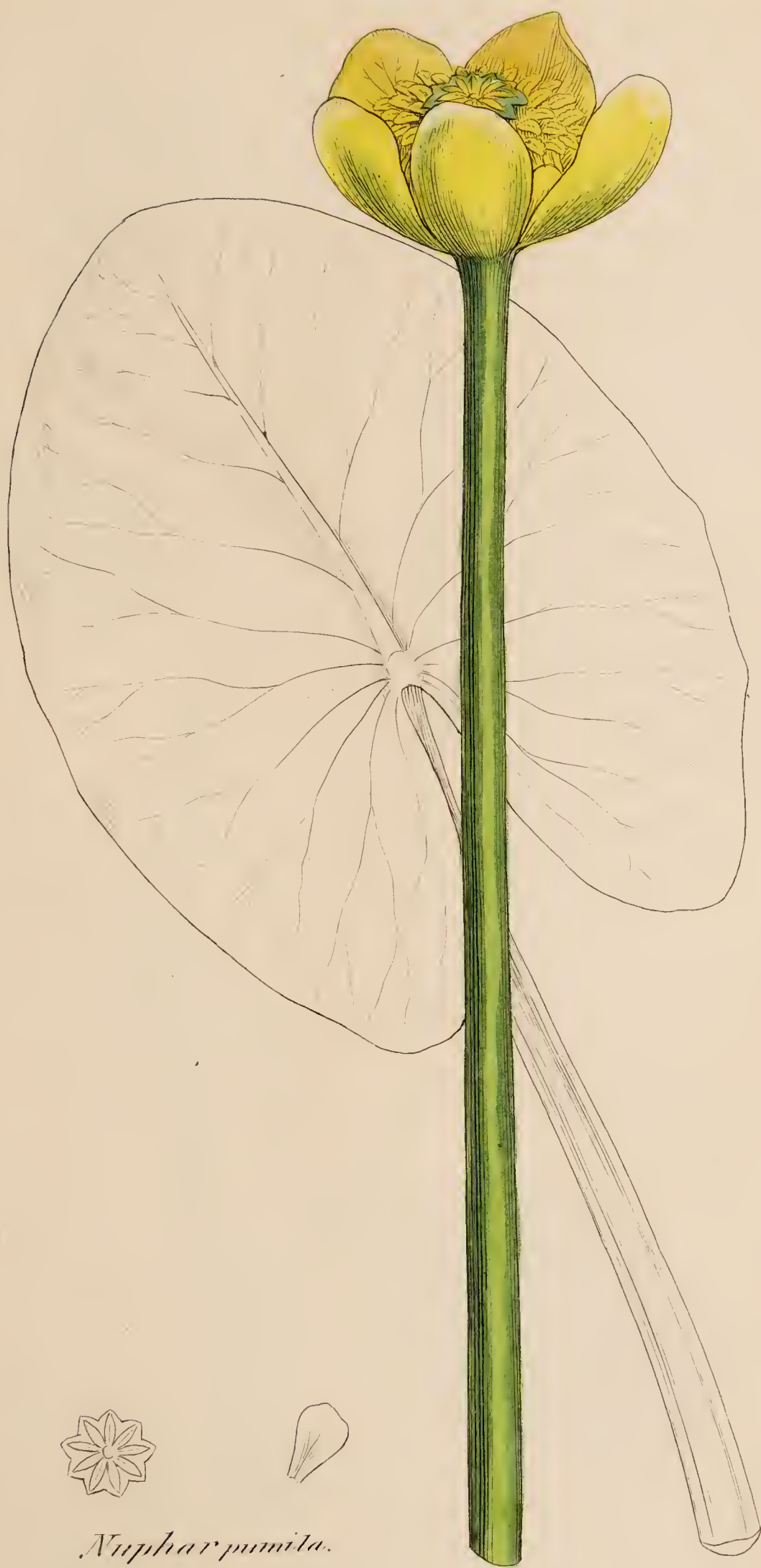




*Nuphar lutea.*







*Nuphar pumila.*



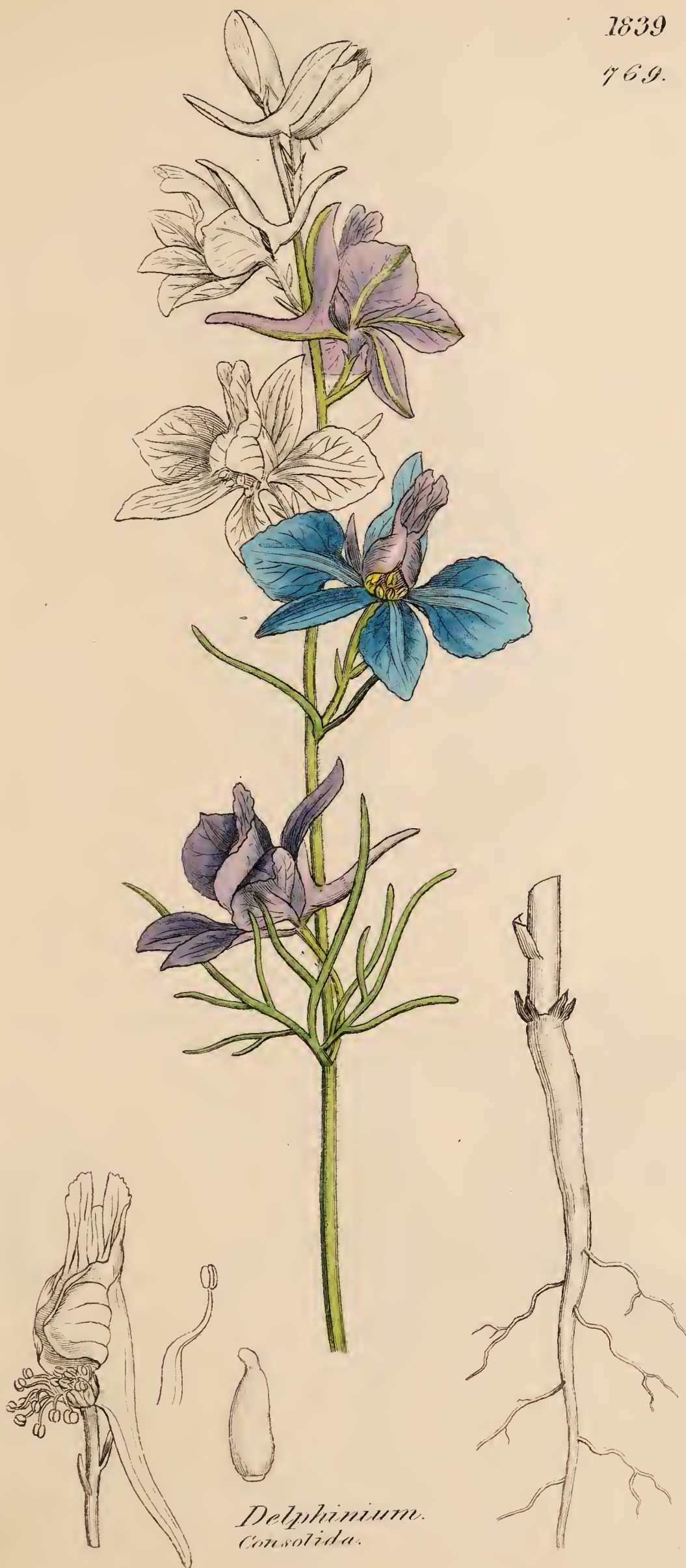


*Peonia corallina.*

Oct. 1. 1805 Published by J. Sowerby, London







*Delphinium.*  
*Consolida.*



















*Stratiotes.*  
*aloides.*





262.  
772.



*Thalictrum*  
*alpinum.*







*Thalictrum minus.*

*J. A. Cooper del. C. A. H. 1791*



611.

774.



*Thalictrum majus.*











612.  
776.



*Clematis*  
*vitalba.*

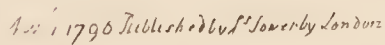




*Anemone*  
*Pulsatilla.*











1484

779.



*Anemone ramunculoides.*

*Aug. L. 1805. Published by Wm. Sowerby, London.*





*Anemone apennina.*

Aug. 1. 1802. Published by Jas. Sowerby, London.







*Adonis autumnalis.*

March 1<sup>st</sup> 1796 Published by J. Powerby London.





100.  
782.



*Ranunculus*  
*Lingua.*





*Ranunculus Flammula.*

Mar. 1840. J. E. Smith. London.





2300.  
784.

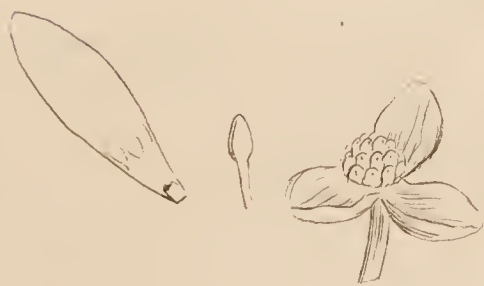


*Ranunculus*  
*gramineus.*





584  
785.



*Ranunculus Ficaria.*



2390.  
786.



*Ranunculus*  
*alpestris.*

Mac 1, 1812 published by J. S. Loeby London.





681.

787.



*Ranunculus*  
*sceleratus.*





624

788.



*Ranunculus*  
*auricomus.*



652  
789.



*Ranunculus*  
*acris.*





516.  
790.



*Ranunculus repens.*







*Ranunculus  
bulbosus.*



2504

792.



*Ranunculus*  
*hirsutus.*







*Ranunculus arvensis.*







*Ranunculus*  
*parviflorus.*

Boerhaave col. July 1791



101.  
795.



*Ranunculus*  
*aquatilis.*







2003  
7.96.



*Ranunculus hederaceus.*

April 1 1809 Publish'd by Jas Sowerby London







*Trollius europæus.*

J. Sowerby del<sup>t</sup> Sept. 1. 1791.





*Caltha palustris.*













*Helleborus*  
*viridis.*

T. Purshy del. Sc. 1794.



613.

801.



*Helleborus fetidus.*







*Mentha sylvestris.*

*Mentha sylvestris.*





446.  
803.



*Mentha rotundifolia.*



207 Published by J. Bowyer London



2424  
804



*Mentha viridis.*

Illustration published by J. A. Kew, by L. W. 11





687.  
805.



*Mentha piperita.*

*M. p. 100. Benth. Bot. Beechey.*







May 1<sup>st</sup> 1824.



1025.

806.



*Mentha odorata.*

4. 302, 112, 142, 161, 170, 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390, 400, 410, 420, 430, 440, 450, 460, 470, 480, 490, 500, 510, 520, 530, 540, 550, 560, 570, 580, 590, 600, 610, 620, 630, 640, 650, 660, 670, 680, 690, 700, 710, 720, 730, 740, 750, 760, 770, 780, 790, 800, 810, 820, 830, 840, 850, 860, 870, 880, 890, 900, 910, 920, 930, 940, 950, 960, 970, 980, 990, 1000.







*Mentha hirsuta.*

Jan 1, 1798 Published by J. Sowerby London.





448.  
878.



*Mentha sativa.*

March 1798 Published by J. G. Smith London





*Mentha acutifolia.*







*Mentha rubra.*

Feb. 11805. Published by Jas. Sowerby, London.







*Mentha gentilis.*





449  
812.



*Mentha gracilis.*

for 1798 Published by J. Sm. & Co. London







*Mentha arvensis.*







*Mentha agrestis.*





*Mentha Pulegium.*





1514

816.



*Thymus serpyllum.*

Oct. 1. 1805. Published by Jas. Sowerby, London.





1143.

817.



*Origanum vulgare.*



*Teucrium Scorodonia*







*Teucrium*  
*Scordium.*





680.  
820.



*Teucrium Chamædrys.*



*Ajuga reptans.*







*Ajuga pyramidalis.*

Feb. 1. 1804 Published by Jas. Sowerby London.











*Ajuga Chamæpitys.*







*Ballota nigra.*





*Leonurus Cardiaea.*

No. 11795. 1864 J. Sowerby London



787.

827.



*Galeobdolon  
luteum.*





884.

828.



*Galeopsis Ladanum.*





2353.

829.



*Galeopsis villosa.*

comp. det. by J. P. S. by L. S. S.





*Galeopsis Tetralix.*

J. F. Sowerby del. Oct. 8. 1794.





667  
891.







768.  
832



*Lamium album.*







*Lamium  
maculatum.*





799  
834.



*Lamium purpureum.*





1933

835.



*Lamium incisum.*

Sept. 2, 1868. Published by J. & S. Sowerby London.



770.

836.



*Lamium amplexicaule.*







*Betonica*  
*officinalis.*







*Stachys sylvatica.*

July. 1797 Published by J. Bowyer, London.



2029.

839.



*Stachys ambigua.*

Now published by J. Towery, London.





1675

840



*Stachys*  
*palustris.*





829.

8/11.



*Stachys germanica.*















137.

843.



*Nepeta*  
*Cataracta*



853

844.



*Glechoma hederacea.*

28







*Marrubium vulgare.*







*Acinos vulgaris.*

July 1797. Bot. Soc. Linn. Soc.



*Calamintha officinalis.*







*Calamintha*  
*Nepeta.*

Feb. 1. 1805. Published by J. Sowerby, London.







*Clinopodium vulgare.*

*Jan. 1. 1805. P. 1805. 1. 1. F. Sowerby, London.*





636  
850.



*Melittis Melisophyllum.*

*Sep 7. 1777 Bullington W. Sussex. Linn.*







*Melittis Melisophyllum* B.





961.  
852.



*Prunella*  
*vulgaris.*



523.

853.



*Scutellaria galericulata.*





524.

854.



*Scutellaria minor.*





361.

855.



*Bartsia alpina.*

Nov. 1796. Publ. by J. Smeeby London.



1845

1846



*Bartonia viscosa*

1845

1846

1847







*Bartisia*  
*odontites.*







*Euphrasia officinalis*

*Euphrasia officinalis* L. 1753. *Publ.* 1753. *Tab.* 1753.



657.  
859.









April 1<sup>st</sup> 1832.







*Melampyrum cristatum.*  
*J. Sowerby del. Dec. 1. 1791.*



33.  
861.



*Melampyrum*  
*arvense.*





115.  
862.



*Melampyrum pratense.*







*Melampyrum sylvaticum.*

Nov. 1. 1800. Published by J. Sowerby, London.



*Lathyrus squamarius.*





399.  
865.



*Pedicularis  
palustris*





*Pedicularis sylvatica.*





*Linaria cymbalaria.*





698.  
868.

*Linaria spuria*.







692.

869.



*Linaria Elatine.*

See 1. 1900. Bot. Soc. of London. 1869.



1253

870.



*Linaria repens.*

Decr 1. 1803. Published by Jas. Sowerby, London.





658.

871



*Linaria vulgaris.*







*Linaria*  
*vulgaris* β. *Peloria*.



214.  
872.



*Linaria minor.*

Fig 1209 Published by J. J. Smith London.





129.

874.



*Antirrhinum majus.* Swerby del<sup>t</sup> Aug 1. 1793.





1155.  
875.



*Antirrhinum Orontium.*

Ap. 1 1803. Published by J. Sowerby, London.





*Scrophularia*  
*nodosa.*







*Scrophularia aquatica.*







*Scrophularia scorodanthe.*



567.  
879.



*Scrophularia verna.*

Larch. 1791. In Lues. y. 4. 1791. 1792.







*Digitalis purpurea.*





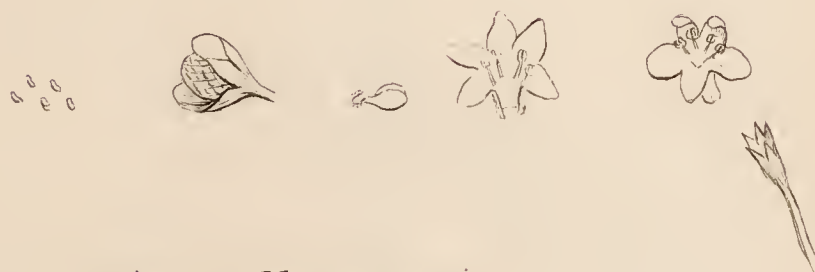
649.

884.



*Sibthorpia europaea.*





*Limosella aquatica.*

*L. aquatica* L.





767.

883.



*Verbena*  
*officinalis.*











*Orobanche major.*











568.

886.



*Orobanche  
elatior.*



422  
887.



*Orobancha minor.*





1786

888.



*Orobanche rubra.*

Sept 1807. Published by Jas. Sowerby London.





423.

889.



*Orobanchë caerulea.*











*Cakile maritima.*





924.

892



*Crambe  
maritima.*

*Det. W. B. Robinson, in the Botanical Garden, N. Y.*



1660

893.



*Coronopus Ruellii.*

Oct. 1866. Published by J. & S. Sowerby, London.







*Coronopus didyma.*

Herb. 11/92 11/10/92 11/10/92





*Isatis tinctoria.*





*Vella annua.*





1659

897.



*Thlaspi arvense.*

Oct. 1. 1806. Published by J. A. Sowerby, London.









*Thlaspi alpestre.*





1485

900.



*Capsella Bursa-Pastoris.*

Aug<sup>t</sup> 1. 1805. Published by Jas. Sowerby, London.







*Hutchinsia petraea.*



327.  
002.



*Teesdalia nudicaulis.*









*Iberis amara.*







*Lepidium latifolium.*



1595

905.



*Lepidium ruderale.*

May 1 1806 Published by Jas. Sowerby, London.







*Lepidium campestre.*





1803

907.



*Lepidium Smithii.*











*Cochlearia officinalis.*

725. S. W. Smith. by J. Sowerby London.





2463  
909.

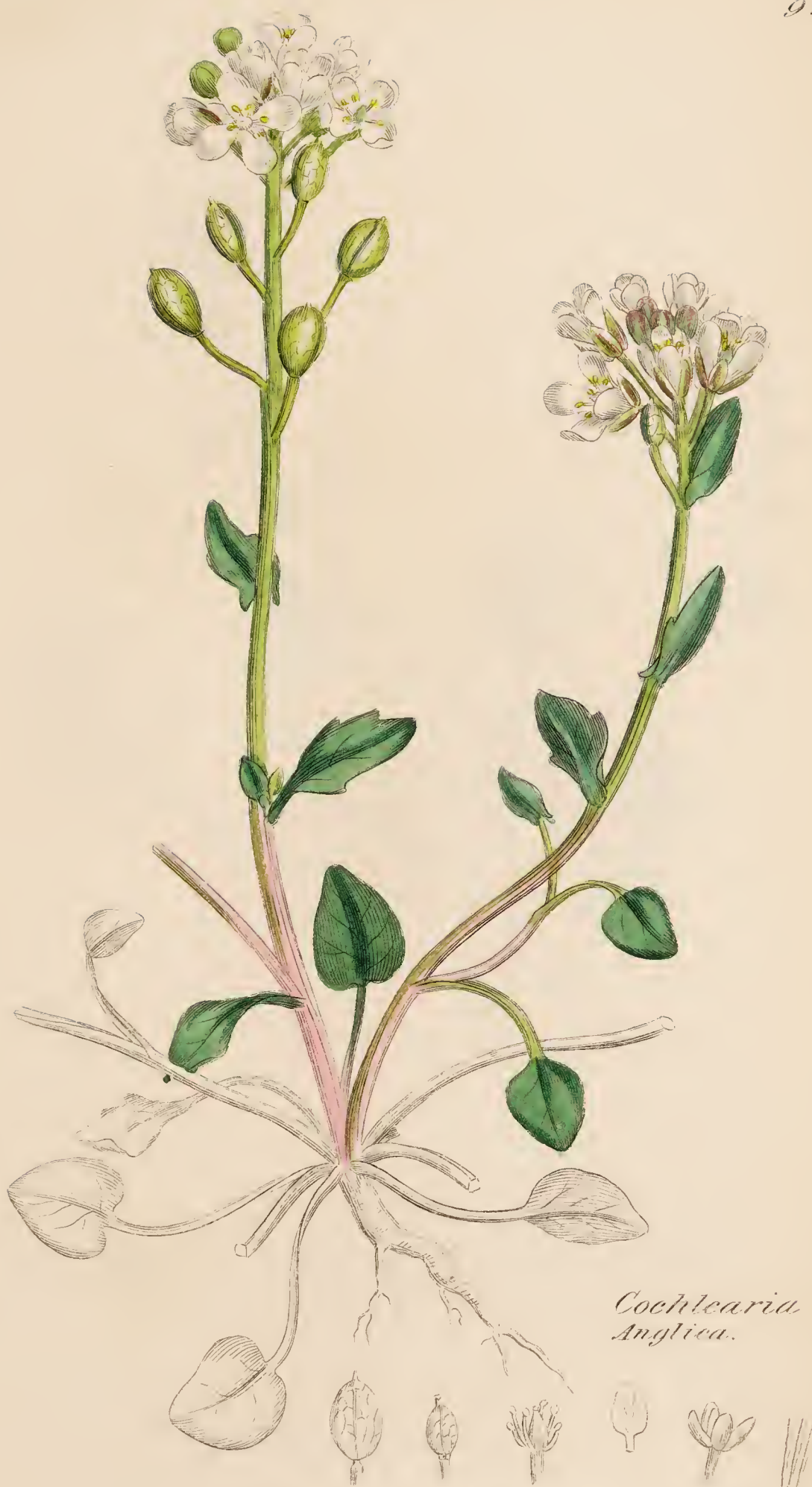


*Cochlearia Grœnlandica.*

*As first published by J. L. Swartz, Linn. n.*



252.  
910.



*Cochlearia*  
*Anglica.*





696  
911.



*Cochlearia Danica.*

*Fuller's Botanical Magazine*







*Cochlearia*  
*Armoracia*.

Superintended by Geo. Sowerby London.



732.  
913.



*Subularia aquatica.*

*As per specimen by J. S. Smith, Linn. Soc.*





954.



Sept. 1798. S. M. J. C. L. L. L.







*Draba aizoides.*



1338

916.



*Draha rupestris.*

July 1. 1804. Published by J. Sowerby, London.







*Draba incana.*

Feb. 1797. Published by J. Sowerby London.





912.

918.



*Draba muralis.*

(Aug. 1831) T. Hooker by J. Pomeroy Leeson



1729

919



*Koniga  
maritima.*

Apr. 1. 1807. Published by J. & Sowerby London.





*Camelina sativa.*

*Dec. 1. 1803. Published by Jas. Sowerby. London.*







*Dentaria  
bulbifera.*



2355.

922.



*Cardamine bellidifolia.*

*Det. by J. A. Sowerby London.*















776.  
925.



*Cardamine*  
*pratensis.*





1000.  
.926.



*Cardamine*  
*amara.*





614.  
927.



*Arabis stricta.*



469.

028.



*Arabis petraea.*







*Arabis ciliata.*





38/.

930.



*Arabis hirsuta.*



178.  
931.



*Arabis Turrita.*

May 1 1794





777\

932.



*Turritis*  
*glabra.*





933.



*Barbarea vulgaris.*

*[Faint handwritten notes at the bottom of the page]*



1129

934.



*Barbarea  
praecox.*







*Nasturtium officinale.*





2324.

036.



*Nasturtium sylvestre.*

*Superior published by J. A. Sowerby London.*



1747

937.



*Nasturtium  
terrestre.*

June 1, 1807. Published by J. Sowerby London.





1840

938.



*Nasturtium amphibium.*

Jan. 1. 1848. Published by Jas. Sowerby London.



735.  
939.







1631

940.



*Sisymbrium Irio.*

Aug. 1866. Published by J. & S. Sowerby, London.



963.  
941.



*Sisymbrium Sophia.*





901  
942.



*Sisymbrium*  
*thalianum.*



942

943.



*Erysimum  
cheiranthoides.*

Oct. 1. 1801. Published by Jas Sowerby, London.





796.  
944.



*Erysimum Alliaria.*



1804

945.



*Erysimum  
orientale.*





1934

946.



*Cheiranthus*  
*fruticulosus.*



1935

947.



*Matthiola incana.*









*Matthiola*  
*sinuata.*

March 1<sup>st</sup> 1798 Published by J. Powerby London



731.

949.



*Hesperis matronalis.*





*Brassica Napus.*



2176.

951.



*Brassica Rapa.*

July, 1810 published by J. B. Lamerby London





637.  
952.



*Brassica oleracea.*

Sp. n. 1799. Publiche. P. L. v. 1.



962.  
953.



*Brassica*  
*Monensis.*

*Brassica Monensis* (L.) DC.







*Brassica campestris.*

London published by J. Sowerby London







*Sinapis arvensis.*





1677

956.



*Sinapis alba.*

Dec 1. 1806 Published by J. Sowerby London . .



969.  
957.



*Sinapis nigra.*

1801 Published by J. Smith, 72, St. Paul's Churchyard, London.





525.

958.



*Sinapis tenuifolia.*



1090

959.



*Sinapis muralis.*

Nov. 1 1802. Published by Jas. Sowerby London.







*Raphanus*  
*Raphanistrum.*



1643

961.



*Raphanus maritimus.*

Sept. 1806. Published by J. & S. Sewerby, London.





1763  
962.



*Erodium cicutarium.*

July, 1807 published by Jas. Smeeby London.



902.

963.



*Erodium*  
*moschatum.*

*E. moschatum* L.







*Erodium maritimum.*





*Geranium*  
*phaeum.*





1091

966.



*Geranium nodosum.*

Nov 1 1802 Published by J. J. Sowder, 1 inch





*Geranium sylvaticum.*





404  
968.



*Geranium  
pratense.*





*Geranium pyrenaicum.*

1797 Published by J. J. Leakey London





75.

970.



*Geranium lucidum.*



1486  
971.



*Geranium  
Robertianum.*

*Aug.<sup>t</sup> 1805. Published by Jas. Sowerby, London.*





778.  
972.



*Geranium molle.*





*Geranium rotundifolium.*





974.

*Geranium pusillum.*



753.

975.



*Geranium dissectum*









254  
976.



*Geranium  
columbinum.*







*Geranium sanguineum.*

Pl. 1795 Publ. by J. Sowerby London.



671.  
978.



*Malva sylvestris.*









*Malva rotundifolia.*

... ..









754.

980.



*Malva*  
*moschata.*



147.  
981.



*Althaea officinalis.*

— by — 1793











*Lavatera arborea.*













